# THIS WEEK'S National Petroleum NEWS

## Coming Meetings

*Indiana Petroleum Association*, Hotel Severin, Indianapolis, Ind., Dec. 2, 3.

*Nebraska Petroleum Marketers, Inc.*, Hotel Paxton, Omaha, Neb., Dec. 9, 10, 11.

*Geological Society of America*, Mayo Hotel, Tulsa, Dec, 28 to 31.

**1932**

*Northwest Petroleum Association*, North Dakota division, Waldorf Hotel, Fargo, N. D., Jan. 11, 12.

*Northwest Petroleum Association*, Minnesota division, Radisson Hotel, Minneapolis, Minn., Jan. 14, 15.

*Oklahoma Petroleum Marketers Association*, Oklahoma City, Jan. 21, 22.

*Society of Automotive Engineers*, Detroit, Mich., Jan. 25 to 29.

*The Kentucky Petroleum Marketers Association*, Brown Hotel, Louisville, Ky., Feb. 9.

*Iowa Petroleum Association*, Fort Des Moines Hotel, Des Moines, Ia., Feb. 9, 10.

*Ohio Petroleum Marketers Association*, Deshler-Wallick Hotel, Columbus, O., Feb. 23, 24, 25.

*American Association of Petroleum Geologists*, Oklahoma City, Okla., March 17, 18, 19.

*Michigan Oil Men's Association*, Statler Hotel, Detroit, March 23, 24, 25.

*American Oil Burner Association*, Mechanics Bldg., Boston, Mass., April 11 to 16.

*National Petroleum Association*, Hotel Cleveland, Cleveland, O., April 21, 22.


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W. T. HOLLIDAY, president, Standard Oil Co. of Ohio, and new chairman of the marketing division of the American Petroleum Institute, at his desk in Cleveland. See article Page 23.

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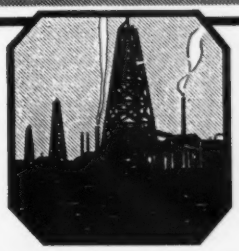

*Branch Offices*
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# Batteries to be Sold and Serviced At Standard Oil Stations

CLEVELAND, Nov. 23

SALE and servicing of automobile batteries on a nation-wide scale will soon be carried on at Standard Oil gasoline stations.

The batteries will be sold under the brand name Atlas, and under a guarantee plan similar to that adopted when Atlas tires were taken on at Standard Oil stations about a year ago.

The sale of batteries is another step in the plan to tie Standard Oil stations over the country into a mammoth chain of merchandising outlets for certain automotive necessities.

Sale of five sizes of batteries was started by Standard Oil Co. of California Nov. 1. The Standard Oil Co. of New Jersey will start to sell and service batteries early in December, it is said. Standard Oil Co. of Ohio is training a personnel to take on sale of this automotive item at its stations.

The Standard Oil Co. of Indiana is to begin the sale of Atlas batteries at 5 stations in Chicago about Dec. 15. The company says this step is experimental and does not indicate the adoption of a definite policy of selling batteries throughout its territory.

Sales of tires, under a universal guarantee plan, by these companies, the Standard Oil Co. of Kentucky, and companies affiliated with the companies named has made Standard Oil stations nation-wide outlets for one brand of tires. The tires are sold at the same prices, a guarantee of a year's service under all conditions, and with the same replacement allowances, at all stations. A man can buy a tire in New Jersey, drive to California, and, if dissatisfied, turn the tire in at any Standard Oil station there for a new tire, paying a standard charge for only the period the tire has been in service.

Wholesale distribution of batteries is through the Atlas Supply Co., New York, which was organized by the group of Standard Oil companies to handle tires and other automotive merchandise. As with tires, the Atlas Supply Co. will buy batteries wholesale, to specifications, the brand name being uniformly Atlas. Those to be sold at Standard of New Jersey stations will be made by the USL Battery Corp., a subsidiary of the Electric Auto-Lite Co.

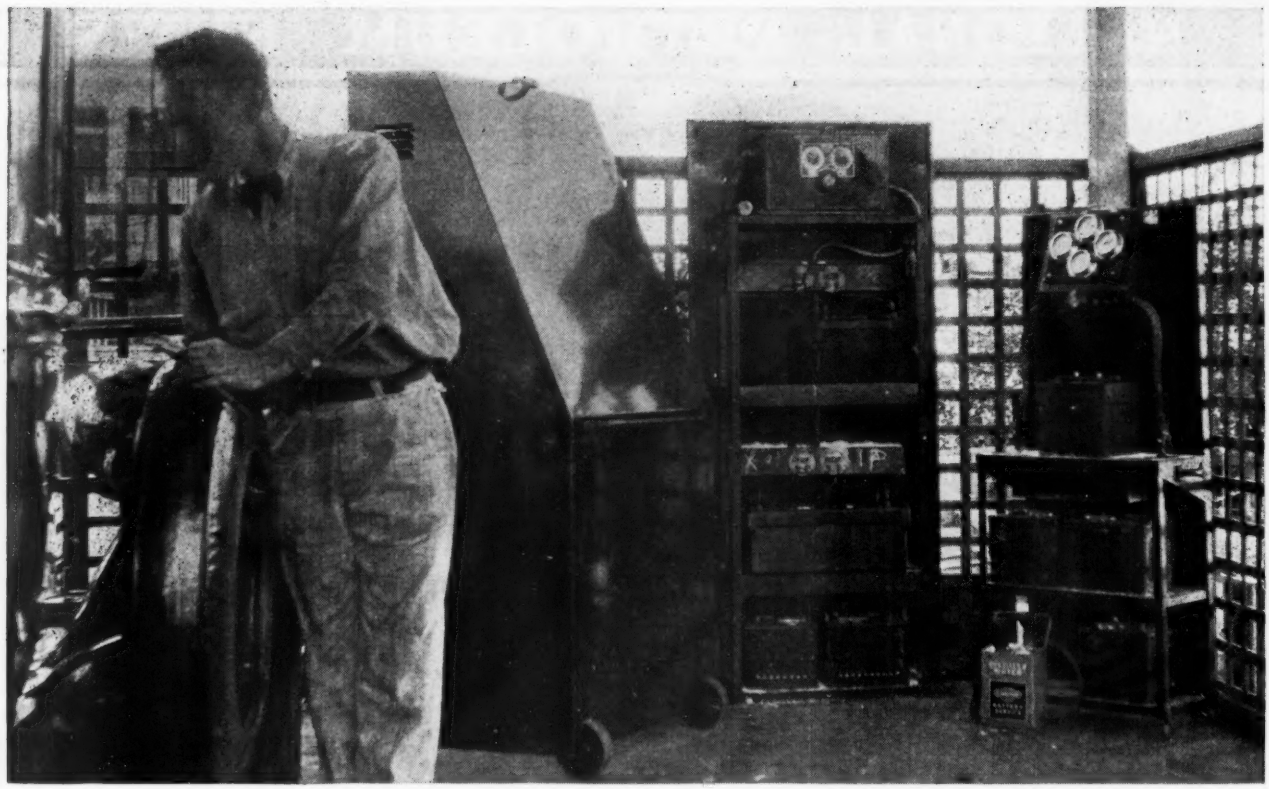
The unconditional guarantee for batteries will be 18 months for those for passenger car service and nine months for units used on commercial vehicles. Replacements will be made with a charge of approximately one-eighteenth of the original sale price deducted for each month of service, in the case of a passenger car, and one-ninth of the sale price, with trucks.

For example: on a 13-plate battery costing $9.95, the replacement charge is 55 cents for the first month of use on a passenger car and ranges up to $9.40 for a 17-month period. When used on commercial cars the charge ranges from $1.11 for the first month to $8.84 for eight months. The guarantee covers all causes of damage or failure, like the guarantee on tires. An allowance of 50 cents is made for any battery turned in on the purchase of an Atlas brand, at stations of the Standard of California, where the batteries are now on sale.

Standard stations on the Pacific coast carry batteries in the following sizes, at the prices given, which are probably the same as will be charged at stations of other Standard companies, as the nation-wide setup is developed:

| Size | Type | Price |
|---|---|---|
| 13 | 138, 138A, 138B, | $ 9.95 |
| 15 | 1510 | 12.95 |
| 17 | 1713 | 15.95 |
| 19 | 1916 | 20.95 |
| 21 | 2119 | 25.95 |

Battery charging is done at



**Outdoor battery testing and charging assembly used at Standard Oil Co. of California stations. The test unit on the right shows a battery on the top shelf ready to be tested through meters at the top of the rack. Rental batteries are on the lower shelf. In the center is the charging unit. On the lower shelf are two new batteries, above are batteries being charged. At night, the test rack is placed in front of the charging unit and the metal hood, shown at left, used to enclose both**

Standard of California stations, each station being equipped with four rental batteries. A charge of 25 cents a day levied on rental units, with a deposit of $4 required where no battery is left for recharging.

A flat rate of 75 cents prevails for recharging any make of auto storage battery and 50 cents for those used on radios. Terminal protectors, chemically treated, are installed at 50 cents each. New terminal nuts and bolts are put in at a charge of 10 cents, and temporary clamps at 25 cents. For removing batteries from the carrier, cleaning them and replacing, the charge is 25 cents.

As a part of its service, the company provides an individual record card for each battery. This card, to be carried under the hood of the car lists the station number making the test, the date, and the conditions of the cells, left, center and right, as indicated by the hydrometer. Abbreviated notations of F-full charge, ½—½ charge, or B—bad, are made on the card accordingly.

Offering free service from Canada to Mexico, the Standard Oil Co. of California has initiated its sales campaign with circulars claiming:

"At your service—is the most convenient—the largest chain of 'battery shops' in the West. Hundreds of Standard Stations are glad to furnish distilled water—expert battery inspection and testing—free. Hundreds of Standard Stations will recharge your battery for one fixed price. Hundreds of Standard Stations will supply rental batteries at one fixed price. YOU DON'T HAVE TO TAKE YOUR ATLAS BACK WHERE YOU BOUGHT IT FOR REPLACEMENT."

Back of this advertising is a personnel trained over several months in the use of testing and charging equipment, and in making minor repairs on corroded battery connections. Furnishing and checking distilled water is a service regularily performed by attendants in the stations' lubricating departments. They will now add to their duties the testing and installing of batteries.

Preparatory to announcing the service, complete and very compact testing and charging equipment was installed at the company-owned stations. An accompanying photograph shows a typical "out-door" installation, with the unit under the same roof housing the grease rack. At smaller stations, the battery equipment is in the station building.

In a prominent place on the testing rack a note to the customer reads:

"The purpose of this test is to determine the working ability of a battery under the same current load required by the starter and for the same period of time—15 to 30 seconds.

"1. The battery is fully charged when the meter indicators read 'Full' or better and all cells test practically the same.

"2. When meter readings show less than 'one-half' or Empty and all cells test practically the same, the battery requires a recharge.

"3. When one or more cells test 'Poor' or read much lower than the others, the battery is

(*Continued on page* 14)

# THE EDITORS' VIEWPOINT

## Clean Relationships With Government Essential

By Warren C. Platt, Editor

THE oil industry is getting closer and closer to government. We may not like it, but like it or not, it seems that we are headed in that direction.

Government today is of varying degrees of goodness and badness. And the degree will change and vary as time goes on, and as the population of various portions of the country change.

But as we—the oil industry—drift, or are driven—into this closer relation to government, one thing we should remember and always fight for and that is a clean relation with that government. Perhaps the industry may not always be as holy as it should be, speaking of a representative or two of it, but what is more probable perhaps the representatives of government may not always be filled with as honest an urge as they should be.

Whatever it may be, and whatever the advantage or disadvantage may seem to be to the industry, what we as oil men should always keep in mind is that we, or our companies, are going to be here for a great many years, maybe even hundreds of years. And we should not be led, or driven, into situations that may not be all that they should be. Better a loss for a a year or two today, than trouble for many years to come.

This is written from a view back through history, of men and of government, from a view back through business, which was wonderfully profitable and whose leaders sometimes thought more of today's profits than of tomorrow's. When men get around to the gray haired period of life, after all its battles, they may weary of the fight —or they may be more stalwart than ever before.

Many strange things have come to pass in this oil industry in the last few years. We say strange because that may be the easiest way to get the point over, even though they may be due to the strong convictions of real men. But changes have come and they have been for the better, both in large and in small companies. Not that we believe that the oil industry has gone to Sunday school, but that it has found that some things are well worth fighting for regardless of the present cost.

We have many points of view in politics today. Perhaps not many of them are crooked as we used to know crookedness in politics twenty years ago; but crooked nevertheless, even though pitched on a seemingly high plane of public service. That is the worst kind of crookedness for the industry to contend with.

We have men in high public office who seemingly will do anything for votes. They do not seem to think that is wrong. We have had many examples—this oil industry—of this in the past dozen years and less; men who warp government investigations to their own ends and who so far seemingly have gotten away with it. They have stood high with the public which did not know how to analyze their falsehoods and discover them.

As our relationship to government gets closer and closer, it behooves the oil industry to bear this in mind. To bear in mind that the present generation of oil men is acting for future generations. We should not let a temporary political advantage cloud our eyes to the future of our business.

This may seem like a very somber and straight laced editorial for as bright a sunshiny day on which it is written, and for as bright a return to prosperity on which it also is written.

We are not afraid of the hearts and the thinking of the oil men. Without being guilty of palaver, we know of none better. But we urge that they not be misled by political clap trap as we get into closer and closer relationship with state governments and the coming congressional session.

At the risk of postponing some of the remedies that we may be direly in need of, let us not hesitate to sacrifice seeming present gains for future success, in our dealings with politicians, reformers, "friends of the people" etc., etc., etc.

• • •

## Uncover the Higher-Ups In the Tax Dodge Hunt

THE dodging of gasoline taxes has gotten into politics, according to all authentic reports. And it has gotten into pretty high politics.

The oil industry has started to run all this down and in some parts of the country the industry's investigators have been able to trace those acts of tax dodging to some pretty good sources. Other districts are just started on their investigations. They should reach the ultimate lodgings of the graft pretty shortly.

In one state, according to report, the gasoline tax dodging has been traced up to the state treasurer of a prominent political party. We do not know whether this will be made to stick in court but we hope so. There is no question but tax dodging could not be indulged in on as large a scale as it is without the help of some higher-ups.

The oil industry has everything to win and nothing to lose in chasing down this tax dodging

to the very last person interested. Perhaps some of these higher-ups are in a position today to give some in the industry a little trouble. All right. A little trouble now is a lot cheaper than the trouble this form of hi-jacking can give the industry later on, if it is allowed to continue.

The industry should be resolute in its determination and pursuance of its fight to eliminate tax dodging. And it should be courageous enough to stand up against temporary inconvenience to arrive at a noble end.

These political grafters are never as strong as they think they are. They may bluster and fume around but their power is not a fraction of what they say it is. Ask any old political reporter on any newspaper.

The oil industry has started some excellent attacks on the tax dodgers, as was told at the Institute meeting at Chicago the other week. Let the industry continue. As the story of the stealing of taxes from the state gets out to the public, the voters will insist more and more that this money be returned to them, rather than to the grafters.

The oil industry, which has so well served the public with good roads, good motor fuel at all points, at a good price and of excellent quality, need not fear the conspiracies of the grafters.

We hope the oil industry's various committees in charge of these investigations will be right blunt with the heads of various party organizations where necessary, an even tell governors where to get off at. For the industry is engaged in a fight to save millions for its customers, as well as to rout crooks out of high office.

## Batteries

(*Continued from page* 12)

worn out or has failed. It is impossible to recharge such a battery and a new Atlas battery should be installed.

"4. When all cells read slightly below empty, but approximately the same it is probable that the battery may be recharged. This can only be determined by putting it on charge."

There are four meters on the test rack, also shown in an accompanying photograph. Three meters indicate the condition of individual cells over the range of poor, empty, and full, when the fourth is adjusted to the size, or number of plates, of the particular battery being tested. Provision is also made for determining the manner in which the battery is taking the charge. This is accomplished by plugging the center cell into one of the meters.

On the charging rack, another part of the battery service assembly, there is space to charge four batteries at a time. Where the assembly is in an outdoor location, the testing and charging units are inclosed and locked for the night within a sheet steel cover.

**Standard Oil Co. of California is advertising its new battery service with "A" frames, as shown above**

## New Safety Airplane Fuel Announced

NEW YORK, Nov. 23.—Technicians of the Standard Oil Co. of New Jersey, a member of the Stanavo Specification Board, Inc., have announced development of a new aviation fuel designed to reduce fire hazard.

The new fuel has much higher flash point characteristics than ordinary aviation gasoline. For this reason the developers believe danger from fire from fuel ingition in case of an airplane crash would be eliminated.

The temperature at which vapor of the new fuel will ignite is given as 107 F. This compares with a flash point on ordinary gasoline ranging from 28 to 46 F.

The new fuel is produced by the hydrogenation process. It has an octane rating of 82.6 without the addition of a knock suppressor. In this respect it is said to differ materially from the high flash fuel recently developed by General Ferrier in France. — (NATIONAL PETROLEUM NEWS, Oct. 14, p. 65.)

The new Stanavo "safety" fuel has been undergoing a series of tests in the laboratories of the National Advisory Committee for Aeronautics at Langley Field, Va. The tests so far indicate that the fuel has operating characteristics of high class aviation gasoline. In a single cylinder test engine a power increase of 10 per cent was found, with lower operating temperatures and every indication of efficient combustion.

Present methods of fuel injection will not be satisfactory with the new fuel in ordinary airplane engines. To derive full benefit a special carburetor and induction system must be installed. This difficulty has been solved by the N. A. C. A. engineers.

# Independent Retailers Stifled Texas Suit Charges

HOUSTON, Nov. 21

RESTRICTION of dealer outlets for gasoline and motor oil is what the attorney general of Texas is hitting at in his suit against 15 oil companies and two associations, filed Nov. 12, charging violation of the state anti-trust law. By dealer is meant the individual, Independent retailer.

This restriction, which, it is charged, lessened the opportunity for the individual with little capital to enter the oil marketing business and also tended to bring the business under the control of the larger oil companies, was brought about by three principal means, the state's petition sets forth.

First, the oil companies discontinued the loaning and installing of gasoline pumps and tanks to dealers on nominal terms, which virtually amounted to giving them the equipment. The practice now is for the dealer to pay the cost of installing the equipment where the oil company does the actual work.

Referring to the former practice of the oil companies in this regard the petition states:

"That as a result of this keen competition (in the securing of dealer outlets by giving away tanks and pumps, other equipment, painting, drives and so on) many citizens of this state were enabled to and did enter the business of marketing oil products. That they were thus enabled to become the head of a business with the investment of very little capital and were enabled to enter into open and keen competition existing then between the defendants and their competitors."

Second, the oil companies resorted to a greater use of the lease and agency agreement in making their contracts with dealers and individual station owners and tightened the terms under which the agreements were made. The result of this, the state charges, was to tie the individual dealer up so that he became, in effect, the exclusive distributor of one oil company's products instead of continuing as a free agent to handle products as he chose.

Third, it is the contention of the attorney general that, just about the time increased use was made by the oil companies of the lease and agency agreement, the margin to the independent retailer, the dealer, was narrowed from 4 to 2 cents. The posting of the 2-cent spread "forced thousands of Independent station operators to agree to cease to sell in competition with the defendants and to become instead the hirelings and employes of the defendants," the petition charges.

The oil companies in Texas, conceivably, could have individually adopted the above named practices as good business proceedure. The Texas attorney general, in his 138 page, inch-thick, petition brings in the idea of a "combination" to do these things through setting forth that they are provided for in the oil industry's code of trade practices, which has been accepted by the individual companies.

The American Petroleum Institute sponsored the code, which was approved by the Federal Trade Commission, and set up the machinery of state committees through which the code has been put in effect in the individual states. That is why the institute is made one of the defendants. The petition calls the code, "nothing more than an agreement, combination understanding and conspiracy in retraint of trade and in violation of the anti-trust laws of Texas."

Provisions in the code which are particularly under fire are Rule 1, calling for the discontinuance of the practice of loaning gasoline pumps and tanks; Rule 14, referring to conditions under which oil companies may acquire stations and lease them to dealers; Rule 17, calling for the posting of prices at which petroleum products are sold.

The Texas Petroleum Marketers' Association, the other association made defendant, was the organization under which code committees were set up in that state.

Four of the 15 oil companies named as defendants do not carry on any marketing business directly in Texas, but operate through subsidiaries, which are also named. The other defendants, for the most part, are companies which are incorporated outside the state. Although there are some 90 oil marketing companies in Texas which signed the code, the attorney general did not direct his suit at the purely local refining and marketing companies.

There has been considerable speculation in the state as to what is back of the suit. Some believe that the attorney general, James V. Allred, sees in the action a means to advance his ambitions to become governor of Texas. Others believe that agencies outside the state are largely responsible for bringing marketing practices which prevail widely over the country to the attention of the attorney general in Texas. They believe that Texas was selected as the state in which an endeavor was to be made to have these practices reviewed by the courts because of the stringent provisions of its anti-trust laws and the fact that the courts there have held to very strict interpretation of the law. Texas courts have not tempered their

## Defendants in Suit

THE 15 defendant companies in the ouster suit brought by the Attorney General of Texas are: Standard Oil Co. of New York; Standard Oil Co. of New Jersey, Standard Oil Co. of California, Humble Oil & Refining Co., The Texas Co., Gulf Refining Co., Pasotex Petroleum Co., Continental Oil Co., Sinclair Refining Co., Magnolia Petroleum Co., Simms Oil Co., Shell Petroleum Corp., Cities Service Oil Co., and Texas Pacific Coal & Oil Co.

decisions with the so-called "rule of reason" that courts in other states, and even federal courts, at times have exercised.

There are reports that the matter came to the attention of the attorney general's office from the smaller Independent refiners in the state who lost business after the intensive lease and agency agreements were put into effect.

The action, an ouster suit, was filed in Travis county district court. It seeks forfeiture of the charters of corporations domestic to the state; cancellations of the permits under which outside, or foreign, companies operate; liens on the properties of all companies and fines totaling $17,850,000.

## Texas Attaches Stock Of Oil Companies

AUSTIN, Nov. 21.—Routine developments of the week in the Texas anti-trust suit include the following:

Efforts to attach a million dollars worth of Magnolia Petroleum Co. stock at Dallas resulted in the sheriff being informed that all the stocks except 13 shares were held in New York by the Standard Oil Co. of New York.

A writ of attachment on 40,860 shares of Humble Oil & Refining Co. stock was served at Houston, the value of the stock being held at $1,021,500.

Efforts to attach stock of the Shell Petroleum Corp. at Dallas met with no success.

Assistant Attorney General Looney bade applications for writs of garnishments to tie up the stock in four domestic oil companies held by foreign oil corporations. The writs were directed against stock held by Standard of New York in the Magnolia Petroleum Co., by the Shell Union Oil Corp. in the Shell Petroleum Corp. of Dallas, by the Standard Oil Co. of New Jersey in the Humble Oil & Refining Co. and the Standard Oil Co. of California in the Pasotex Petroleum Co. of El Paso.

Garnishment of the stock is sought to assure payment of any judgment that might be awarded the state as the outcome of the suit.

# Reduction in Mid-Continent's Crude Output Advised

By Telegraph

TULSA, Nov. 24

A MEETING of Texas, Oklahoma and Kansas operators has been called for Nov. 30, in Tulsa, to consider reducing crude oil production in these states by from 10 to 20 per cent.

Cicero I. Murray, chairman of the Oil States Advisory Committee, has proposed a reduction of 15 per cent for the whole country, stating that withdrawals of crude from storage have ceased with the lessening demand from refiners, which is natural in this season of the year. It is said about 80,000 barrels a day is going into storage in the Mid-Continent at present.

Production for the entire country, the week ending Nov. 14, was 2,464,000 barrels daily average, according to the figures of the American Petroleum Institute. Of this Oklahoma contributed 543,750 barrels; Texas, 990,450 barrels, of which East Texas made up 411,250 barrels; California 507,900 barrels.

Oil operators and members of the state agencies in Oklahoma and Kansas having to do with the regulation of oil production, meeting in Oklahoma City Sept. 11, set up a schedule for crude production by states to apply over the rest of 1931 and 1932, which they believed would avoid over-production in this period.

Thurman Hill, chairman of the Kansas Public Service Commission, was chairman of this meeting in Oklahoma City, and it is upon his call that the meeting in Tulsa for Nov. 30 has been arranged. While Texas did not have a representative of the state at the Oklahoma City meeting, where the allocation plan was set up, Gov. Sterling later approved the plans.

The Oklahoma City schedule called for a maximum allowable production for the country of 2,379,000 barrels daily. The figure for Oklahoma was set at 546,000 barrels, for Kansas 110,000 barrels, for Texas, 900,000 barrels, for California, 500,000 barrels. Comparison of these figures with current actual production will show that Texas is exceeding the figure set by 90,000 barrels daily and Oklahoma by 46,000 barrels. A reduction of 10 per cent in the total output of the country, as has been suggested, on the basis of last week's figures would bring the figure down to about 2,200,000 barrels.

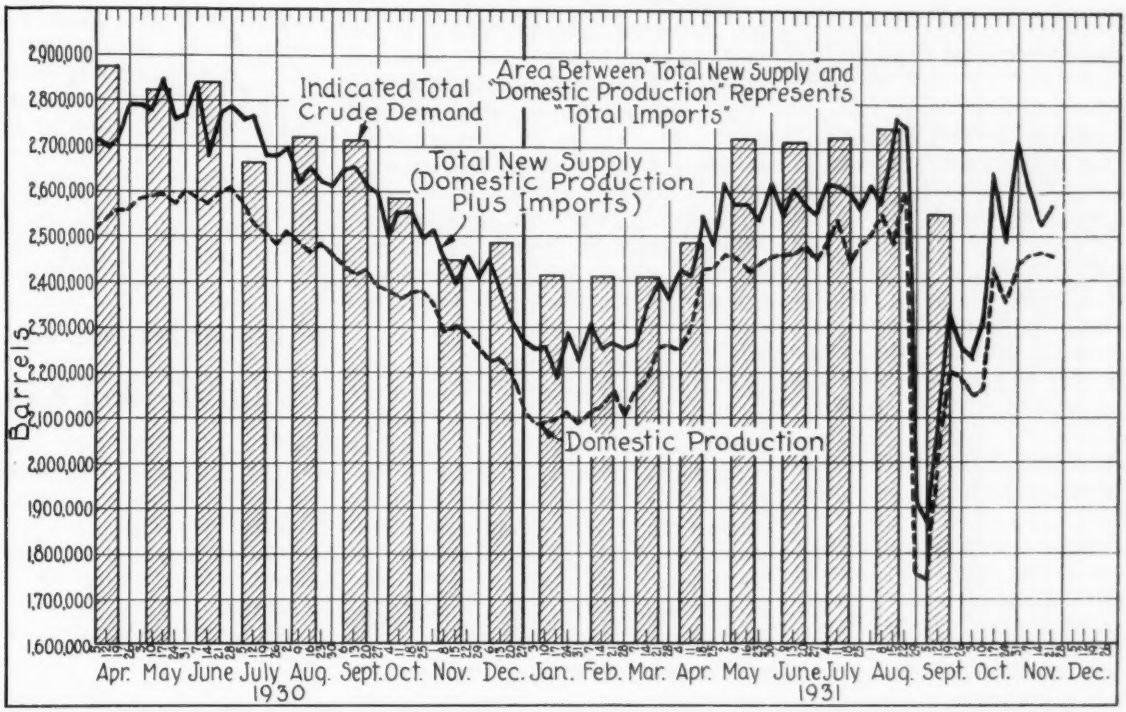
## Kettleman-Long Beach Gas Line Complete

LOS ANGELES, Nov. 20.—A natural gas pipeline, extending 213 miles from the Kettleman Hills oil field to the southern California city of Long Beach, was completed early in the past week and is now undergoing the necessary tests before being put into regular service.

The line was built by Southern Fuel Co., which is jointly owned by Southern California Gas Co., and Southern California Edison Co. interests. The line cost about $6,500,000. Twenty-six inches in diameter, it will have a normal capacity of 130 million cubic feet of gas per day and, by the installation of compressors, its throughput may be increased to nearly 200 million cubic feet.

Southern California Edison uses in the neighborhood of 90 million cubic feet of natural gas per day in its steam electric generating station on Terminal Island at Long Beach. Any surplus of supply above that needed for the steam plant will go to supplement the waning natural gas reserves of the Los Angeles Basin fields.

# Review of Late Production News




**This chart shows crude oil supply according to the American Petroleum Institute reports (solid line) in relation to indicated crude oil demand as taken from the Bureau of Mines monthly reports (shaded columns).**

CRUDE production in the United States was reduced 10,650 barrels daily average to 2,453,400 barrels per day in the week ended Nov. 21 the American Petroleum Institute estimates.

A cut of 40,000 barrels of East Texas was partially offset by a gain of 23,000 barrels at Oklahoma City and by other gains in Texas.

Imports rose 59,143 barrels daily average to 117,714 barrels per day making a net gain in new supply of 48,493 barrels daily.

### Oklahoma

RESULTS of tests on prorated wells in the Oklahoma City and Seminole fields indicate a considerable revision downward of the figures that have been carried on the potential production in those areas. The tests are not completed in either area, but so far as they have gone they show about an 18 per cent drop in Seminole district from the tests made last March.

At the close of the week new gauges had been taken on 521 of the 845 wells in the Oklahoma City field. Total potential on this group was 6,074,202 barrels, which is 1,047,062 barrels less than the same group showed last April. The potential used by the corporation commission for establishing proration is based on a four-hour gauge, computed to 24-hour basis, and divided by three.

Wilcox sand wells in this group showed a decline of 15.1 per cent since April; Simpson formation wells declined 12.2 per cent and the Siliceous lime, or Arbuckle wells, 47.3 per cent, the latter wells are the oldest in the field.

Among Oklahoma field operations the currently most interesting test is the deepest well in the United States, drilled by the Mid-Kansas Oil & Gas Co. and Ramsey Petroleum Corp. in the Cement field, Caddo county.

**Daily Average Production, Important Districts, American Petroleum Institute Figures**

**(By Telegraph)**

| | Week-Ended Nov. 21 Barrels | Nov. 14 Barrels |
|---|---|---|
| Okla. City | 192,200 | 169,200 |
| Oklahoma | 558,550 | 543,750 |
| East Texas | 371,250 | 411,250 |
| Total Texas | 961,550 | 990,450 |
| California | 505,100 | 507,900 |
| East of Rockies | 1,948,300 | 1,956,150 |
| Total U. S. | 2,453,400 | 2,464,050 |

The well was drilled to total depth of 10,079½ feet, where it was bottomed in an extremely hard formation in the Pennsylvanian series. Six and five-eighths inch casing was set and cemented at 9777 feet. The hole has been bailed several times, once getting the column of mud down to 6000 feet from the top, but it persists in filling up and at the end of the week was standing 4200 feet from the top.

The interesting part of this performance is that some oil has made its appearance and a little gas is coming off. Just what the source of the oil and gas is cannot be ascertained until the hole is cleared of mud, but it evidently is coming from somewhere in the 302 feet of open hole below the casing seat.

It is doubtful whether the hole will be drilled any deeper, unless the test to be made reveals good reason for continuing. There are several horizons at various depths which

showed oil and gas during the course of the drilling, which probably will be tested by ripping the pipe if the hole fails to make commercial production in the formation below the pipe.

In the Oklahoma City field a slight extension westward was effected by the well of Kessler et al, center east half, SE SE SE of 22-11-3. This offsets the well drilled early in August by Phillips Petroleum Co., which established productivity of the Wilcox sand along the west flank of the field, more than a half mile in advance of production.

The Kessler well found top of the Wilcox at 6452 feet and was drilled to 6561. It was cleaned into the pits and shut in. It will be opened Dec. 4 for gauge. It is estimated to be good for 30,000 barrels or more.

### Kansas

ONE new well in the Ellsworth-Rice county area which for some time to come will be the center of activity in that state, is an extension in its vicinity merely because it is the second producer in that section. The productive trend in these counties was established several months ago by a series of producing wells two, three and four miles apart. (See map, page 64, Nov. 11 issue of NATIONAL PETROLEUM NEWS.)

The new well is the Derby Oil Co.'s SE SW NW of 22-16-10. Siliceous lime was topped at 3342 feet and total depth is 3359 feet. Well had not been cleaned of mud as the week closed, but it looked like a good producer.

It is roughly one-fourth of a mile from the discovery well in that immediate area, Palmer & Gypsy Oil Co.'s No. 1 Stottenberg, which is located in the center of the southwest quarter of the same section. The latter well, drilled in last July, swabbed 100 barrels per hour.

The drilling campaign for this general area, certain to be one of large proportions later, is slowly warming up. Everything along this trend, including the Raymond pool, was shut in for months because there was no market for the oil. Now, with connections being made to several of the wells, necessary offsets are being started.

One new well is being started by Midwest Exploration Co. on the unit block in Stafford county, the new location being the center of the SW SW of 31-22-11. It is in the quarter section next east of the one in which the discovery well was drilled by Midwest in October, 1930, and which has been producing since it was recently opened more than 1300 barrels per day.

The new location is an offset only in the sense that it is on the offsetting "forty," being located in the center of 40 acres while the discovery was in the corner of its 40 acres. The location is in line with the tendency to drill this territory on the basis of one well to 40 acres; that rule, however, is not being generally accepted.

Another new well was started offsetting the recently completed Isern well of Hilligoss and others, southeast Barton county. The new test is that of Derby Oil Co., in the NW NE SE of 12-20-11.

### Texas

CHIEF in interest in Texas the past week was the Cranfill-Reynolds et al test in southeastern Upshur county, which may open a new pool on the Sabine uplift, north of the East Texas pool. It is nearly five miles from production.

The well, which unexpectedly began showing oil and gas more than a week ago, as it was on the point of being abandoned, was standing as the week closed, with pipe cemented and plans were for early drilling of the plug to test. The hole is bottomed at 3728 feet and the best pay is supposed to have been around 3706 feet. Not much is known about the sand from which the oil is coming. The initial test was made with drill stem.

Supposed top of the sand is nearly 60 feet lower than the water level of the main East Texas pool. As there is a dry hole between this test and nearest production and the oil is 35 gravity, or five less than the East Texas field oil, if the well proves to be commercial it will be the opener of a new pool, rather than an extension to present producing territory.

The wildcat of Shipley and others in Ward county, extreme west Texas, is not yet completed. Latest reports as the week closed were that it was standing with 2000 feet of oil in the hole. Top of the pay was at 4663 feet and it had been drilled two feet in. The location is in the SW corner of Sec. 3, Block 1, W. & NW Survey.

## Allowables Set for Wells In Western Kansas

TULSA, Nov. 21.—As the result of a hearing in Wichita before the Public Service Commission of Kansas, Nov. 19, allowable production was established for wells in western Kansas.

Midwest Exploration Co.'s well in Stafford county, effective Nov. 20, went on a 20 per cent of potential allowable. It has been pumping around 1300 barrels daily for the past three weeks.

The new well of Hilligoss and others, in Barton county, just northwest of the Raymond pool, was given an allowable of five days full production, after which it was ordered cut back to 500 barrels daily for 30 days. At the end of that period it is to be prorated to 20 per cent of potential.

Connections will soon be made by Stanolind Pipe Line Co. to three more wells in the Ellsworth county area. Two of them are near the town of Holyrood and oil will be handled from loading rack at that point.

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**New Shallow Sand in Earlsboro**
By Telegraph

TULSA, Nov. 23.—Plugging back an old Wilcox sand well in the Earlsboro field Stanolind Oil & Gas Co. obtained a surprising yield from a sand passed up several years ago. The well, No. 2 Jones in 20-9-6 Seminole county, Okla., tested at the rate of 1500 barrels of oil and ten million cubic feet of gas per day.

Pipe was ripped in the old 4200-foot Wilcox well from 2770 to 2775. The new horizon is in the Calvin series. It holds considerable possibilities for Seminole and Earlsboro wells when the Wilcox is depleted.

# Gov. Sterling Made Party to Suit On East Texas Proration

DALLAS, Nov. 21

A NEW start was made Friday in the attack in federal court on East Texas proration when counsel for E. Constantin and the Brock-Lee Oil Co. filed an amended petition, bringing into their case the martial law government of the East Texas field.

The original petition, which is to be heard Jan. 4 at Tyler, named the Railroad Commission of Texas and Brig. Gen. Jacob F. Wolters as defendants. Gen. Wolters is in command of the troops in the martial law zone.

The amended petition includes Gov. R. S. Sterling and charges that he and Gen. Wolters have conspired to restrain production to the end that prices might be raised. It attacks the proration orders promulgated by the governor and enforced by the militia as a deprivation of property rights without due process of law.

In the original petition, the new conservation law of the state was attacked and this point is made also in the amended petition.

It also brings in the tri-state agreement, signed by representatives of the governors of Texas, Oklahoma and Kansas on Sept. 18, which allocated definite amounts of oil to each state.

Others named in the petition just filed are the three members of the Texas Railroad Commission, Attorney General James V. Allred, Adjutant General W. W. Sterling.

The plaintiffs assert that Gov. Sterling formerly was a stockholder and director of the Humble Oil & Refining Co., that he now owes the Humble "in excess of $400,000 and less than $1,000,000," and that Gen. Wolters is an attorney for The Texas Co. This alleged relationship, the petition says, places the two in such close contact with the two companies as to disqualify them from the administration of proration.

The charge is made that the governor acted in excess of his authority in declaring martial law Aug. 17 and that his assertion that a "state of insurrection, riot and tumult" existed was a "sham to cloak an attempt to exercise arbitrary executive power."

Plaintiffs ask damages totaling $100,000.

The original suit was to have been heard on Oct. 29, but was postponed. Prior to the postponement, District Judge Bryant, at Tyler, issued a temporary restraining order against Gen. Wolters and a few days later cited him for failure to observe the injunction. Gov. Sterling then assumed full responsibility for the acts of the general.

When the Brock-Lee suit was first filed, the governor took the proration order issued by the railroad commission and made it an executive order. The governor asserted some time ago that he could be made party to court action, in his executive capacity, only through original suit in the Supreme Court of the United States.

In preparation for the three-judge hearing of the Brock-Lee suit, the plaintiffs have the past week been taking depositions of Gov. Sterling, W. S. Farish, president of the Humble; T. J. Donoghue, vice-president of The Texas Co.; R. R. Penn, independent operator and others.

# California Gas Law Upheld By Supreme Court

WASHINGTON, Nov. 25

EFFORTS of the director of natural resources in California to enforce the oil and gas conservation law of that state were upheld by the United States Supreme Court today. The court, in an opinion by Chief Justice Hughes, affirmed the decision of the California Court of Appeals in the case of Bandini Petroleum Co., Commodore Petroleum Co. and Wilshire Oil Co. vs. Superior Court of California in and for the city and county of Los Angeles et al.

The high court's decision, however, did not pass upon the constitutionality of the California statute, which gives state authorities the power to regulate gas-oil ratios in oil pools, to prevent waste of gas, and thereby brings about control of oil production. The court said, in effect, that the case did not come to its attention in such manner that it was encumbent upon it to pass upon the constitutionality of the act.

The ultimate question in the case as presented by the chief justice was whether the statute, on its face, with the standards it set up, was beyond the power of the state to enact.

"If the statute be viewed as one regulating the exercise of the correlative rights of surface owners with respect to a common source of a supply of oil and gas," said the chief justice, "the conclusion that the statute is of that character upon its face, that is, considered apart from any attempted application of it in administration which might violate a constitutional right, is fully suported by the decisions of this court. In that aspect the statute, unquestionably, has a valid operation, and it cannot be said that superior court was without jurisdiction to entertain the suit in which the injunction order was granted.

"It is not necessary to go further and deal with contentions not suitably raised by the record before us. Constitutional questions are not to be dealt with abstractly. Having jurisdiction of the suit the superior court had authority to take steps to protect the subject of the action pending the trial on the merits."

# Demands 78 Wells Drilled Through Wilcox Sand be Plugged Back

TULSA, Nov. 21

MODIFICATION of the recent order of the Oklahoma Corporation Commission classifying Oklahoma City field, for proration purposes, as four zones or sources of supply, is asked in a petition filed by the Phillips Petroleum Co.

The company asserts that to preserve the Wilcox sand zone as a really distinct source of supply, it is necessary to plug back some 78 wells that have been drilled through the Wilcox and into underlying producing formations. Unless this is done, the Phillips company says, the Wilcox will soon suffer from water intrusion and its gas energy will be dissipated into the lower formations. Oil will be lost in the same manner, it is claimed.

The commission order which Phillips seeks to have modified, was signed Nov. 7 and established proration by zones. Four separate areas were defined. They are the Wilcox sand, the Simpson formation below the Wilcox, the Arbuckle lime and the area east of the fault line which runs through the field. The latter zone is of small importance.

The Phillips company says that the evidence introduced at the hearing shows there are at least six separate producing horizons. To the list of four recognized in the commission's order it adds the Green Shale sand, the Johnson sand and the School Land sand. These three were grouped by the commission under the heading "Simpson Below Wilcox Sand," covering everything between the Wilcox and the Arbuckle lime. (The Wilcox sand is Upper Simpson.)

The evidence shows, according to the petition, that a formation known as the Stamper lime lies between the Johnson sand and the Arbuckle lime. The Stamper is barren of oil, gas and water in its upper part, and in its lower portion carries only water.

The 78 wells complained of have been drilled, the Phillips company says, through the Wilcox sand into or through one or more of the lower horizons and a great many more wells, 250 or more, have been drilled through the Johnson sand and into the Arbuckle lime. In many of them the final string of casing was set at the top of the first producing horizon encountered and the hole is open from there to the bottom, with many wells producing from more than one formation, or zone of supply.

The petitioner says that while edge water is beginning to make its appearance in the Johnson sand, most of the water trouble in that formation is caused by wells that have been drilled too deep. Now, the water is moving from that sand into the School Land sand, four wells having been affected thus far, and it is feared that water will in a short time reach the Wilcox.

The commission is asked to order the plugging back of all wells drilled through the Wilcox into deeper horizons, with plugs—cement—to be placed in the impervious zone just below the Wilcox. Only in that manner can the correlative rights of Wilcox operators be preserved and the gas energy native to the Wilcox sand be preserved, it is asserted.

# Ajax Pipe Line Co. to Lay Third 10-Inch Line from Oklahoma

TULSA, Nov. 21

AJAX Pipe Line Co., controlled by the Standard Oil Co. of New Jersey, will lay a 10-inch line, paralleling the present double 10-inch trunk system from Glenpool, Okla., to Wood River, Ill. Capacity will be increased about 30,000 barrels per day.

Increased demand by customers of this line, which include the Standard Oil Co. of Ohio and the Pure Oil Co., both of which own interests in the Ajax company, call for the increase in capacity.

While no announcement has been made by the company, the trade understands that final plans have been made for the expansion and that work will be started as quickly as pipe deliveries are made. Some increase in station capacity will also be necessary. The report also is that another line will be laid into the Oklahoma City pool. Some time ago the Oklahoma Pipe Line Co., which also is a New Jersey company subsidiary, arranged to reverse the direction of flow of its southeast-going line so as to bring East Texas crude to the Glenpool station for shipment east.

Reports persist in Tulsa that the Texas-Empire Pipe Line companies will join in laying a line from the Seminole district to East Texas. The original Texas-Empire Pipe Line Co. has trunk line from the former point to Chicago. Recently another company was formed in Texas and line was laid from the East Texas field to the Gulf Coast. The original company is owned equally by The Texas Co. and the Empire Oil & Refining Co. while in the second one Tidal Oil Co. has an interest.

The plan now discussed would permit the movement of East Texas oil by pipeline to the Chicago district, where The Texas Co. and the Empire company operate refineries, and to Lawrenceville, Ill., where the Indian Refining Co., controlled by The Texas Co., is served by Texas-Empire line.

# Western Refiners See Both Advantages And Faults in "Q" Proposals

By Telegraph
TULSA, Nov. 23

BOTH advantages and disadvantages in the adoption of the new "Q" fluid proposed by the Ethyl Gasoline Corp. are seen by refiners in the middle west and in the Mid-Continent. Most of the disadvantages cited by refiners revolve about the level of the octane rating originally proposed which is now being reconsidered by the Ethyl corporation.

Because refiners in the middle west and in the southwest appear to be most concerned about the proposal, NATIONAL PETROLEUM NEWS has been seeking the consensus in those areas. A staff writer has been interviewing a large number of refiners within the past week.

Following are the main advantages as seen by refiners in the two districts which do not have the advantage of crude which will produce a naturally high octane number gasoline:

1. Standardization of knock ratings and hence elimination of destructive octane number competition.

2. Minimize bootleg and cut-price competition.

3. Relieve some refiners of an expensive building program.

The following disadvantages of "Q" gasoline of 68-70 octane number particularly have been cited by refiners:

1. Proposed knock rating would not benefit average motorist in comparison with cost increase.

2. Halt in the octane number race would be only temporary.

3. Cracking must be increased in any case to work off surplus fuel oil output as gasoline demand increases.

Standardization of the knock rating of regular grades of gasoline is looked on as the most important advantage of the "Q" proposal by most refiners. One refiner, however, expressed the opinion that the standardization effect would be only temporary because of the overlapping of competitive districts and because some refiners may again try to get a sales advantage by boosting the octane number.

In the case of the average Mid-Continent gasoline a 68-70 octane number standard would require a step upward of 10 to 15 numbers. Refiners thus would have to use quite close to the maximum fluid content in order to meet the standard or increase their cracking and use a smaller quantity.

A good many refiners doubt whether it will be possible to advance the price of "Q" gasoline in the great middle-western consuming area to a point where the refiner will not have to absorb a considerable part of the added cost of the standardized fuel. Aud refiners generally say that they cannot take a step which would have the same effect as a reduction in selling price.

With the consumption of fuel oil increasing at a slower rate than demand for gasoline most refiners recognize that they must crack an increasing percentage of their heavy oil. This is desirable from a conservation standpoint. It is desirable also from an economic viewpoint since general opinion is that the differential between the selling prices of fuel oil and gasoline may remain quite wide over a considerable period.

That the use of "Q" fluid may relieve in some cases the smaller refiners, or large refiners with inadequate cracking facilities from the immediate spending of large sums is generally agreed. In many cases, however, little plant expansion has been made during the last year or so, and the refiners are now finding it imperative to revamp and expand their facilities because of greater demand or because of obsolescence of their present equipment.

Effort to reduce the standard to the 64-65 level is widespread among refiners, which they say would serve to avoid installing additional cracking equipment in many cases and prevent raising the standard to a point not required by the consumer. In case this reduction is effected, the difficulty, while not removed, will be considerably minimized.

The refiner who has no Ethyl license will be hardest hit by the present situation. It will be necessary for him to sell either the third grade gasoline almost entirely, or to increase octane rating of his product by cracking, which, under present price conditions, will frequently make it difficult for him to compete with "Q" gasoline. Many believe this will have a good effect in that it will help to eliminate the bootlegger and the price cutter in regular grades.

Fairly well crystallized opinion is to the effect that establishment of such standards for motor fuel as are proposed should be accomplished by general and intensive study and discussion of the proposition by the entire industry, and that when set it should represent the best judgment of the industry as to what the customer needs and what the refiner can supply on a sound economic basis which will net both the consumer and the producer the best return on expenditure. Refiners state that a mistaken idea as to the value of successively higher anti-knock ratings or any other quality of gasoline should not induce the customer to demand a quality level which gives no actual advantage to anyone concerned.

## Refinery's Entire Output Sold in One City

DENVER, Colo.—The entire output of Continental Oil Co.'s new Denver refinery is marketed in Denver. Not a drop of the plant's products is loaded into a tank car. The output is trucked direct to retail or consuming points.

The refinery has a charging capacity of 2000 barrels of crude daily. The gasoline output is distributed with semi-trailer units which have 3000-gallon aluminum tanks. Lubricating oils are handled in cans carried in enclosed racks on the trailers.

# Synthetic Rubber from Gas By-Product Possible

CLEVELAND

PRODUCTION of synthetic rubber by the repeated polymerization of acetylene has been developed to a commercial success by the duPont Co., which is erecting a plant in New Jersey to manufacture the new material. The trade name "Duprene" has been applied to the synthetic rubber, chloroprene being one of the intermediate substances produced during its manufacture.

Synthesis of the material is being accomplished by the addition of hydrochloric acid to mono vinyl acetylene, which is first produced by the ctalytic condensation or polymerization of acetylene. The final polymerization is carefully controlled to determine exactly the properties of the final product.

Chloroprene polymerizes spontaneously at great velocity to produce a rubber similar to natural rubber which has been vulcanized with sulfur. It is not necessary or desirable to add sulfur or other vulcanizing agent to the synthetic rubber, the polymerization product having all the properties of the vulcanized natural material.

Stopping the polymerization at a point to give a rubber similar to unvulcanized natural rubber has also been developed. This material, du Pont technologists say, can be mixed with fillers, diluents, coloring matter, etc., and then vulcanized by heating alone at 110 to 130 C. Duprene is more dense than natural rubber, more resistant to water penetration or absorption, less permeable to many gases, is swelled less by petroleum and other solvents and resists attack by ozone, oxygen and other chemicals more effective than the natural product, it is said.

It is more highly resilient, apparently because of the absence of impurities. Milling does not soften it as it does natural rubber, and ordinary reclamation methods are not applicable to it. It does not soften under heat, but hardens slowly at high temperatures.

Since the new material has no sulfur content, it does not tarnish metals. On account of its very small particle size, smaller than natural rubber, many articles and materials can be impregnated with it, which cannot be impregnated by natural latex. In fact, chloroprene can be polymerized within the interstices of many bibulous and porous materials, thus impregnating them more satisfactorily.

Although the source of the acetylene for polymerization was not disclosed, the relationship between synthetic rubber and petroleum and natural gas hydrocarbons is close, since acetylene occurs in cracking still gases, and may be produced under controlled conditions by pyrolitic decomposition of ethane and higher natural gas hydrocarbons. Thus synthetic rubber may well be made from natural gas in future.

## S.O. New Jersey to Call $30,000,000 Bonds

NEW YORK, Nov. 23.—Standard Oil Co. (N. J.) has called for redemption Feb. 1, 1932, $30,000,000 of its 5 per cent debentures due Dec. 15, 1946. Redemption price is 102 and interest. The original issue was $120,000,000 and proceeds were used in the retirement of the company's preferred stock.

"Current earnings of the American Petroleum industry, as reported to date, do not show a satisfactory return on the investment," stated W. C. Teagle, president of the New Jersey company. "As the industry is now amply supplied with facilities to meet requirements there will be no need for large capital expenditures in the near future.

"This situation together with a reduction in its overhead and controllable expenses, and a decrease in stocks of crude and finished products, enables the Standard Oil Co. (N. J.) to provide, out of cash, the $30,600,000 needed to retire the called bonds, thereby effecting a reduction of $1,500,000 per annum in fixed charges, while still maintaining its strong cash position.

## Long Burning Wells In Roumania Conquered

LONDON, Nov. 23.—After burning for over two years with near-volcanic force at times, the Romano-Americana oil well at Moreni, Roumania, was finally put out recently. The well burned with such intensity that in its early stages, its light made night reading possible at the Roumanian capital of Bucharest, 70 miles away.

The fire was extinguished by a second attempt at tunnelling which disclosed machinery which had stuck in the well previously. After this machinery was extricated, the pumping of the gas was made easier and the pressure diminished to the extent that the fire went out.

The well began burning May 28, 1929. A fire-fighting specialist from the United States had been sent for to put the fire out by dynamiting but this was not successful.

## Pumping Engine Explodes, Kills Operator

TULSA, Nov. 21.—Explosion of a pumping engine at the pumping station of the Oklahoma Pipeline Co. at Jenks killed one man and seriously injured a second.

Lem Richardson and John W. Hensley were on duty at the station and noticed that the engine was not operating properly. While shutting it down to remedy the trouble the engine exploded, killing Richardson instantly. Hensley sustained a broken leg and various minor injuries but is reported to be in no danger.

# Marketing Division to Organize Tax Vigilantes at Once

CLEVELAND, Nov. 23

ONE of the immediate activities of the marketing division of the American Petroleum Institute under the chairmanship of W. T. Holliday will be the organization of vigilance committees to help state gasoline tax administrators apprehend and prosecute tax evaders. Mr. Holliday is president of the Standard Oil Co. of Ohio.

Paul E. Hadlick, secretary of the division, will be assisted temporarily in the work of organizing state or other local vigilance committees by a man who has become familiar with operations of tax evaders and who has brought pressure in a diplomatic way on public officials to obtain stricter enforcement of gasoline tax laws.

The division also will strive to have more adequate enforcement provisions incorporated in state gasoline tax laws. The recommended enforcement sections drafted by a committee of lawyers and approved by the institute's directors in Chicago, will be circulated to the states for inclusion in tax laws when state legislatures convene.

Mr. Holliday brings to the marketing division of the institute an intimate knowledge of all divisions of our industry. He is to be regarded more than an oil company lawyer whom fate put in an executive chair.

Mr. Holliday's close contact with the industry dates from the time he was graduated from Harvard Law School in 1908.

Fresh from college he joined the firm that handled legal matters for the Standard of Ohio and the East Ohio Gas Co. He began to handle production leases and pipeline rights of way for the gas company.

With the introduction of the Model T Ford which transformed the automobile from a rich man's plaything into a transportation utility, the Standard needed greatly increased facilities to handle its rapidly developing gasoline business. This involved the building of several hundred bulk plants and Mr. Holliday traveled hither and yon through Ohio fighting the many adverse ordinances that would have throttled the building of bulk storage depots within municipal limits.

This was in 1910. Six years later the fight in the municipal councils of the state had to be resumed but this time in behalf of fair ordinances permitting the construction of filling stations which the rapidly increasing number of automobiles made necessary.

A year later, when Virgil P. Kline died, Mr. Holliday was appointed general counsel of the company, a post he held until he was elected president of the company in 1928.

Mr. Holliday knew all divisions of our industry. He had had experience that ranged from the writing of oil and gas land leases to the executive council table. He is inclined to wince when someone unwittingly remarks, "What the oil industry needs is some fresh blood from outside the industry. Look what Holliday has done for the Standard of Ohio."

"What Holliday has done for the Standard of Ohio," is common knowledge. He injected new and vigorous life into an organization that was slipping from its position as dominant marketer in the home state of Standard Oil.

Under his leadership the company enlarged and modernized its refineries at Cleveland and Toledo. It bought, enlarged and modernized a refinery at Latonia, Ky., in the Cincinnati switching district. Recently it acquired the refinery of the Solar Refining Co. at Lima.

Things began to happen in the marketing division. When kerosine was hauled in horse-drawn tankwagons, nearly every Ohio village had a Standard Oil bulk plant. Most of these were still in use when Mr. Holliday took the president's chair. The economies of modern motor transportation had not been embraced. So shortly after he became president the company started buying new truck equipment. In one year more than 150 semi-trailer units with tanks carrying 750 or more gallons were bought. Delivery routes were revamped and uneconomic bulk plants were closed by the score.

Attractive large service stations began to replace unattractive stations. New products were introduced with an accompaniment of advertising such as the state had never before seen or heard in connection with petroleum products. The new products carried new names, so today the motorists of Ohio have virtually forgotten the name Red Crown but there is none who does not know of Sohio and X-70.

Under his leadership the Standard of Ohio has bought an interest in the Ajax Pipe Line Co. which with an older line carries crude to Standard's four Ohio refineries.

When Mr. Holliday took charge of the Standard of Ohio the gasoline markets in the state were in bad shape. Margins were wide and only "suckers" were paying the posted prices for gasoline. He believed that retail prices should follow, in general, the wholesale prices regardless of costs. At the time, he said competition and not costs should establish the real market. He announced that Standard would meet all competition. Margins were narrowed and competition was met. Today the Ohio market is probably as free if not freer, of bad marketing conditions as any market of comparable size in the country.

This experience should serve well the marketing division of the industry while Mr. Holliday is its pilot.

# Beg Pardon, Gurney, But We Stick to Our Story

CLEVELAND, Nov. 21

"YOU all know that I have told you that we were saving the people of this northwest country in one year's time approximately $62,000,000 on petroleum products," said D. B. Gurney of the House of Gurney, Yankton, S. D., in a radio broadcast from his station WNAX Nov. 13 in commenting on the article about his operations published in the Nov. 11 issue of NATIONAL PETROLEUM NEWS.

"Sixty-two million dollars—and I want you to write that figure down so that there'll be no question at any time as to whether or not I made the statement. I acknowledge that I made that statement that we were saving you approximately $62,000,000. Now in this article they acknowledge one half of that on gasoline alone. Their statement says that I was saving $62,000,000 on gasoline. I beg to differ with the gentleman. I never made that statement in my life. On petroleum products! They say that twice as much gasoline would have to be sold in this territory as was sold. We made that saving to the public. They do acknowledge $31,000,000 on gasoline because they acknowledge half of what we claim. They say that I would have to double the sales of gasoline to have made that difference."

Following is what D. B. Gurney said in his broadcast Oct. 1, the day after he had been interviewed in Yankton by NATIONAL PETROLEUM NEWS:

"We have reduced the price on gasoline 7 cents per gallon since we started in business the last day of July, 1930. That 7 cents means approximately $62,000,000 saved in a year. Sixty-two million dollars is worth just as much to you as to any great oil corporation in the country."

In the Nov. 11 article, NATIONAL PETROLEUM NEWS said:

"In a broadcast as late as Oct. 1 he claimed credit for saving gasoline consumers $62,000,000 in the preceding year in the territory reached by WNAX. At 7 cents a gallon his huge amount would have meant 885,914,000 gallons, or about 50 per cent more gallons than are consumed in the territory."

Gurney was talking of gasoline when he claimed the $62,000,000 saving for the Northwest people in a year. He did not qualify his statement by saying it was on all petroleum products WNAX stations sold.

NATIONAL PETROLEUM NEWS did not state that WNAX stations or other marketers in the territory would have to double their gallonage to save the people of the Northwest. It said the $62,000,000, at 7 cents a gallon, represented about 50 per cent more gallons of gasoline than were sold in the territory, and liberal allowanace was made for the extent ofWNAX territory. The figure was based on the 1930 total gallonage of North and South Dakota, and one third the total gallonage of Minnesota, Nebraska and Iowa. The sum of this gallonage was 600,998,000, or a little more than two thirds the gallonage represented by the $62,000,000 claim of Gurney at his maximum asserted saving at 7 cents a gallon.

The basic figures were gross inspection statistics for North and South Dakota and gross gasoline receipts figures for the other three states. Net tax statistics which would make the Gurney statement appear even more exaggerated, were not used.

Statistics available for the first eight months of 1931 show the gross gallonage increases in the five states were only as follows: North Dakota 0.7 per cent; South Dakota 1.1 per cent; Minnesota 14 per cent; Iowa 10 per cent, and Nebraska 3.88 per cent.

## Felt Mats Protect Ford Cowls from Gasoline

DENVER, Colo.

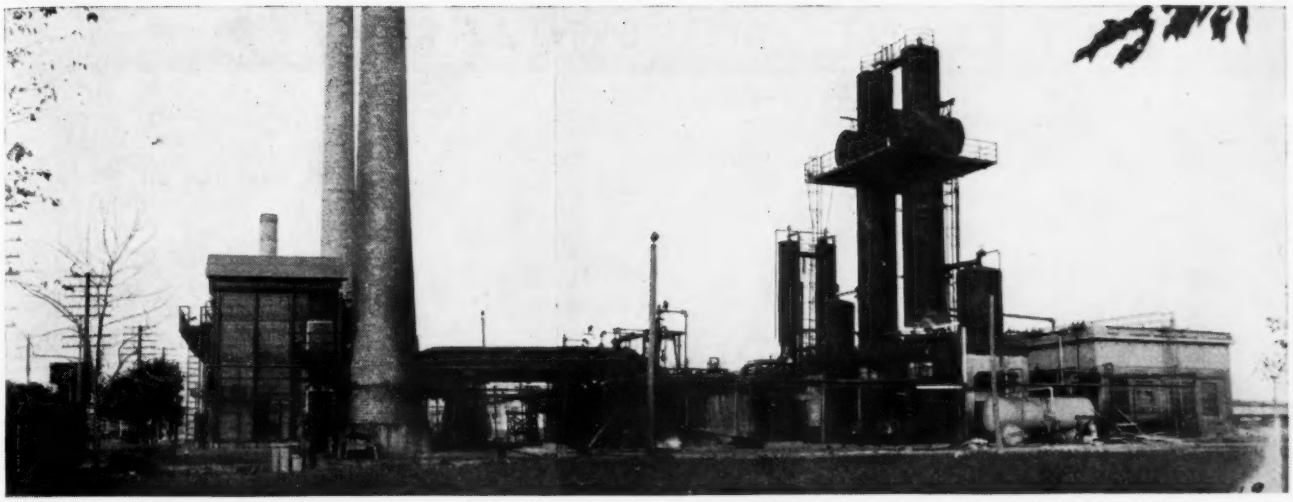
FELT mats are used to cover the gasoline tank fill pipes on Model A Fords at most service stations in Rocky Mountain territory. The idea is believed to have originated in California and spread eastward.

The mats prevent gasoline that may sputter from the fill pipe while the tank is being filled, from spotting the finish of the car. They also catch drippings from the nozzle when it is removed.

The mats usually are about 12 inches wide and 18 to 20 inches long. A hole large enough to slip over the protrusion of the fill pipe is cut into the mat about six to eight inches from one end. The short end of the mat is placed farthest from the operator and the longer end on the side from which the tank is filled so that the hose may also rest on the mat and not rub the finish of the cowl.

Some of the mats are of felt about a half inch thick. This felt may be bought at any harness shop. Some others were made of the felt padding used under carpet and may be bought at any store that sells carpeting.

When not in use the mats are hung on hooks placed on the gasoline pumps.



A Cross cracking plant of the vintage of 1926 equipped with bubble towers and a furnace vastly improved over earlier designs

# ...REMODELING...

## EXISTING Cross Cracking Units in Good Physical Condition Largely Eliminates Accumulated Obsolescence

By

**J. C. Chatfield**

N. P. N. STAFF WRITER

IN NO part of the refinery has modernization progressed so rapidly in the past decade as in the cracking plant. Strides in the cracking art have been so rapid in the period that it is not too much of an exaggeration to say that each new cracking unit erected caused every previous unit to become more or less obsolete.

It was only ten years ago that cracking units began to be added to the plants of the Independent refiners. Except for a few of the very large Independents cracking previously had been confined to the refineries of the Standard group of companies.

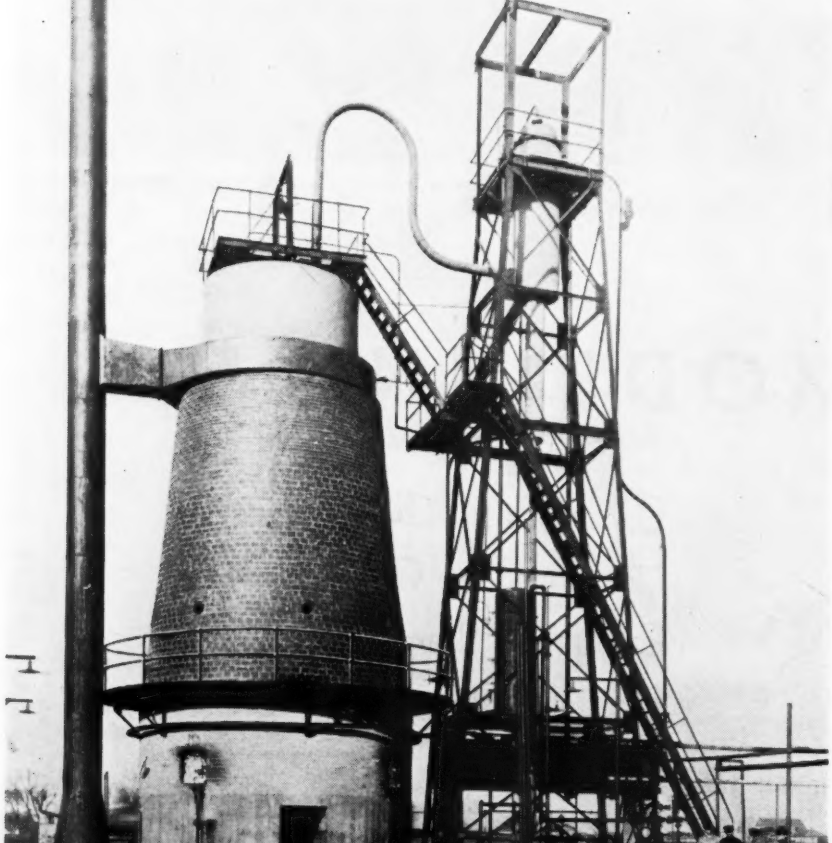
A large number of processes were experimented with before the World War, during, and immediately after that period. Fleming developed his vertical chamber heating system which was installed in several plants, with low capacity units of around 300 barrels per day. Greenstreet's steam process was studied intensively, but failed to become a factor. The Jenkins process was made a commercial proposition, finally evolving with bubble towers and a heating system comparable to the older Heine water-leg boiler principle. Many of the units of this method are in regular use today, and recently several were installed for the Soviet government in Russia.

Vapor phase cracking early attracted considerable attention from technologists, one of the first to be seriously studied being the Rittman process, developed during and just after the war for the production of especially aromatic hydrocarbons for fighting fuels. This process was ahead of its age, especially on account of the absence of suitable materials for use, as well as the meager knowledge of cracking technology available at that time. Later types of these processes are the Leamon, the T. V. P. or Knox, de Florez, and the Gyro. The Gyro and de Florez are in regular use in several plants.

The growth of cracking through the industry generally dates from the almost simultaneous offering of the Dubbs and Cross processes, which originated as Independent processes and were originally installed at plants outside the Standard group.

First commercial units of the Dubbs and Cross processes were installed late in 1921, the first Dubbs unit at the Shell Petroleum Corp. at Wood River, Ill., and the Cross unit at the Indian Refining Co. plant at Lawrenceville, Ill. The first Cross plant particularly created intense interest among refiners early in 1922 and resulted in a considerable number of orders for units within a few months after the Indian unit was operating successfully.

Within a short time the Holmes-Manley process was offered to the industry generally and became one of the four ma-



**One of the early efforts to provide the Independent refiner with a cracking process to increase his yield of gasoline from crude to a level comparable with that being obtained at Standard plants. A Fleming cracking still in 1922**

jor refining processes of the country, the Tube and Tank of the Standard Oil Co. of New Jersey being the fourth.

The advent of the pipe still-soaking drum type of cracking plant with its increase in unit capacity, safety, flexibility of raw charge and yield, rendered obsolete a vast number of the older shell still type cracking plants and caused the beginning of a program of replacement which even now is not entirely complete. For example the Standard Oil Co. of Indiana, just this winter is replacing part of its old Burton stills at Casper with a modern large capacity cracking plant.

As late as 1928 there were still 1219 Burton units in existence at refineries in the United States. During the course of the year, however, 159 units were scrapped and in 1929 another 165 units were dismantled. On Jan. 1, 1931, there were still 793 Burton units with 8.4 per cent of the cracking capacity of the country. Of these, 602 were shut down, however, and only 191 in operation.

From a position where it was producing nearly all of the 30,000,000-barrel production of cracked gasoline in 1922 the Burton process dropped until it had only 20 per cent of the charging capacity of the country in 1928 and a far smaller percentage of the 122,554,000-barrel cracked gasoline production of that year.

The development of the cracking process in the past decade has moved in three directions, toward greater throughput per unit, greater yield of gasoline per barrel of raw charge and more lately higher octane number of the finished motor fuel.

Yields of gasoline have been more than doubled in the past decade, keeping pace with the increase in charging capacity of individual units.

Table No. 1 shows the great increase in charging capacity of cracking plants since June 30, 1925, when the U. S. Bureau of Mines issued its first survey of crackers. In 1925 the average capacity of operating plants was 294 barrels per day and the capacity of building plants was 822 barrels per day.

By Jan. 1, 1928, the average capacity of operating plants had risen to 706 barrels per day, by Jan. 1, 1930, to 1055 barrels and on Jan. 1, 1931, the average capacity of plants in operation was 1416 barrels per day, double that in 1928. There were 39 plants building on the first of January with an average capacity of 2850 barrels per day and it is quite likely that the next government survey will show the average capacity of building plants to be around 4000 barrels per day.

Table No. 2 shows the average unit capacity of the various principal cracking processes installed on Jan. 1, 1928, compared with Jan. 1, 1931. This also illustrated how total cracking capacity of the country has increased 50 per cent in four years while the number of individual units was being cut 20 per cent.

The trend toward increased capacities, of course, has been dictated by operating costs. The extent to which process design can go in reducing costs of operation was indicated in the

first article of this series appearing in the Oct. 28 issue.

The first of the tube still-reaction chamber cracking plants were designed only to crack the raw charge and not to separate the cracked gasoline from the recycle stock. The 1922 Cross, for example, was called a "synthetic crude" unit.

The 1922 unit consisted of a preheating coil of 28 tubes and a cracking coil of 28 tubes enclosed in a simple, direct-fired furnace. Oil from the tubes passed direct to the reaction chamber and from it through a condensing coil to a gas separator. Fixed gases were removed and burned and the "synthetic crude" removed for later distillation into finished cracked gasoline, recharging stock and fuel oil.

This unit had a capacity of 500 barrels of raw charge per day and was on stream three days and shut down the fourth for cleaning.

In 1923 refinements were added to the plant which were calculated to increase the capacity slightly and to utilize a certain part of the waste heat to reduce re-running expense.

From the 1923 reaction chamber the cracked oil was expended into an evaporator from which bottoms were taken off as fuel oil and the overhead conducted to a spiral fractionating column. Cold charge was pumped through the top of this spiral column to condense heavy fractions of the vapors into recycle stock which was withdrawn from the bottom. Fixed gas was separated from this overhead and the condensate was a pressure distillate which yielded about 75 per cent gasoline.

The 1923 plant took a charge of 600 barrels of gas oil or kerosine and gave a yield of 30 per cent finished gasoline.

Bubble towers were added to the unit in 1924 and end point gasoline was produced direct from it, eliminating the re-running of pressure distillate.

At the end of 1926 the Cross design was changed to take further advantage of the contained heat. This change involved the return of recycle stock to the furnace for further cracking by the use of a hot oil pump. Previously recycle stock had been withdrawn and cooled before being reintroduced into the cracking zone.

The hot oil unit with various refinements from year to year was the standard Cross unit until combination skimming and cracking in a single self contained unit was developed quite recently.

This brief sketch of the development of the process has not, of course, attempted to trace the changes in furnace design, pumps, towers, exchangers and the like which have permitted the stepping up of throughput and increases in yield. It merely has sought to indicate how fundamental changes in process design as well as changes in dimensions have contributed to the obsolescence of plants built in former years.

Refiners who have cracking plants installed some years ago which are still in good physical condition are confronted with a real problem. The cracking art

## Table 1

### Census of Cracking Units Showing Increase in Unit Capacity

| | No. Units | Total Charging Capacity | Average Unit Capacity |
|---|---|---|---|
| June 30, 1925 | | | |
| Operating.. | 2,345 | 690,492 | 294 |
| Shut Down | 41 | 26,200 | 640 |
| Building ... | 141 | 116,000 | 822 |
| Total .... | 2,527 | 832,692 | 329 |
| Jan. 1, 1928 | | | |
| Operating... | 1,435 | 1,013,000 | 706 |
| Shut Down | 889 | 253,000 | 284 |
| Building ... | 10 | 22,000 | 2,200 |
| Total .... | 2,334 | 1,288,000 | 551 |
| Jan. 1, 1929 | | | |
| Operating... | 1,527 | 1,194,501 | 781 |
| Shut Down | 594 | 147,923 | 250 |
| Building ... | 74 | 134,450 | 1,817 |
| Total .... | 2,205 | 1,476,874 | 669 |
| Jan. 1, 1930 | | | |
| Operating... | 1,345 | 1,419,200 | 1,055 |
| Shut Down | 583 | 139,840 | 240 |
| Building ... | 65 | 149,900 | 2,306 |
| Total .... | 2,002 | 1,708,940 | 853 |
| Jan. 1, 1931 | | | |
| Operating... | 1,126 | 1,594,990 | 1,416 |
| Shut Down | 703 | 244,661 | 348 |
| Building ... | 39 | 111,130 | 2,850 |
| Total .... | 1,868 | 1,950,781 | 1,044 |

## Table 2

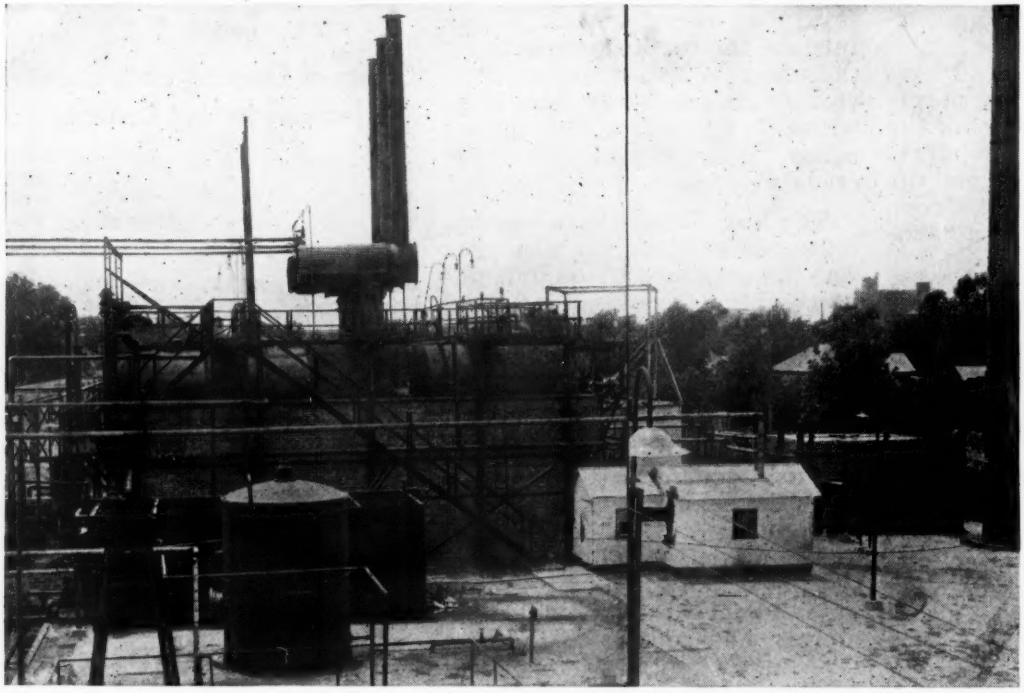
### Census of Cracking Plants by Processes Showing Increase in Average Capacity

| | 1928 | | | 1931 | | |
|---|---|---|---|---|---|---|
| Process | No. Units | Total Capacity | Average Unit Capacity | No. Units | Total Capacity | Average Unit Capacity |
| Burton | 1,219 | 247,000 | 202 | 793 | 164,249 | 207 |
| Dubbs | 168 | 148,000 | 881 | 185 | 252,250 | 1,366 |
| Cross | 154 | 211,000 | 1,370 | 150 | 245,800 | 1,638 |
| Tube & Tank | 121 | 152,000 | 1,256 | 118 | 385,460 | 3,266 |
| Holmes-Manley | 150 | 207,000 | 1,380 | 115 | 233,900 | 2,033 |
| Jenkins | 32 | 34,000 | 1,063 | 46 | 66,150 | 1,438 |
| de Florez | 2 | 1,500 | 750 | 6 | 13,550 | 2,258 |
| Gyro | ..... | ..... | ..... | 20 | 16,000 | 800 |
| Isom | 102 | 102,000 | 1,000 | 115 | 179,150 | 1,557 |
| Others | 386 | 185,500 | 480 | 320 | 394,272 | 1,232 |
| Total | 2,334 | 1,288,000 | 551 | 1,868 | 1,950,781 | 1,044 |

## Table 3

### Decline in Use of Burton Process

| Date | Units Operating | Units Shut Down | Total Units | Total Charging Capacity |
|---|---|---|---|---|
| Jan. 1, 1928 | 500 | 719 | 1,219 | 247,000 |
| Jan. 1, 1929 | 571 | 489 | 1,060 | 192,586 |
| Jan. 1, 1930 | 378 | 517 | 895 | 171,440 |
| Jan. 1, 1931 | 191 | 602 | 793 | 164,249 |



A battery of Coast cracking stills at a Mid-Continent refinery in 1923. Coke deposition was retarded in these units by mechanically operated scrapers. Partial knock-back of vapors was obtained by the aerial condensing drums surmounting the stills

has gone ahead so rapidly that the old plants are not capable of producing finished goods which will meet present specification demands.

Operating margins have decreased so that it is no longer possible to operate profitably in low capacity units, particularly where there are costly processing steps which have been eliminated in more modern equipment.

Quite often sources and kinds of raw material have changed from those which were contemplated when the original installation was planned. Where gas oil was available before, perhaps only reduced crude can be run at a profit today.

In certain plants it may be more economical for the refiner who has a multiplicity of relatively small units to replace them with the large modern combination unit to which crude may be charged direct.

In most plants, however, are cracking units in good mechanical condition which can be used in any remodeling modernization program. By adding certain pieces of equipment here and there, replacing certain parts which may have been attacked seriously by erosion or corrosion, the refiner may emerge with equipment which will do an excellent job at a cost which will enable him to compete on present margins. The modernization depends, of course, on existing equipment, charging stocks, the specification limitations of the product desired, and the appropriation available for the work.

One of the most obviously desirable changes for the refiner equipped with cold oil Cross units is to convert them into the modern hot oil or recirculating type. In the past year a number of refiners have done this piece of work.

The expense of changing from cold oil to the hot oil cycle is small and yet it has yielded big dividends where it has been undertaken. The revamped hot oil units are capable of cracking to ultimate yields of gasoline and fuel oil at approximately three-quarters of the cost of operation of the cold oil unit. One hot oil unit often can be made to give more gasoline yield than two of the old cold oil units.

Some refiners have modified hot oil units which were using gas oil as a charging stock so that the remodeled units will operate satisfactorily on crude oil or reduced crude. Additions have been made to some hot oil

## Table 4

### Growth in Production of Cracked Gasoline at U. S. Refineries

| Year | Cracked Gasoline Production (Bbls.) | % of Crude Run to Stills | Total Straight Run and Cracked Gasoline Production (Bbls.) | % of Crude Run to Stills |
|---|---|---|---|---|
| 1922 | 30,000,000* | 6.0 | 144,010,000 | 28.8 |
| 1923 | 35,000,000* | 6.0 | 174,416,000 | 30.0 |
| 1924 | 40,000,000* | 6.2 | 200,655,000 | 31.2 |
| 1925 | 68,583,000 | 9.3 | 239,965,000 | 32.4 |
| 1926 | 93,736,000 | 12.0 | 272,038,000 | 34.9 |
| 1927 | 101,226,000 | 12.2 | 298,273,000 | 36.0 |
| 1928 | 122,554,000 | 13.4 | 341,722,000 | 37.4 |
| 1929 | 143,727,000 | 14.5 | 388,621,000 | 39.3 |
| 1930 | 164,243,000 | 17.7 | 389,547,000 | 42.0 |
| 1931 | 174,000,000* | 19.2 | 385,000,000* | 43.7 |

*Estimated

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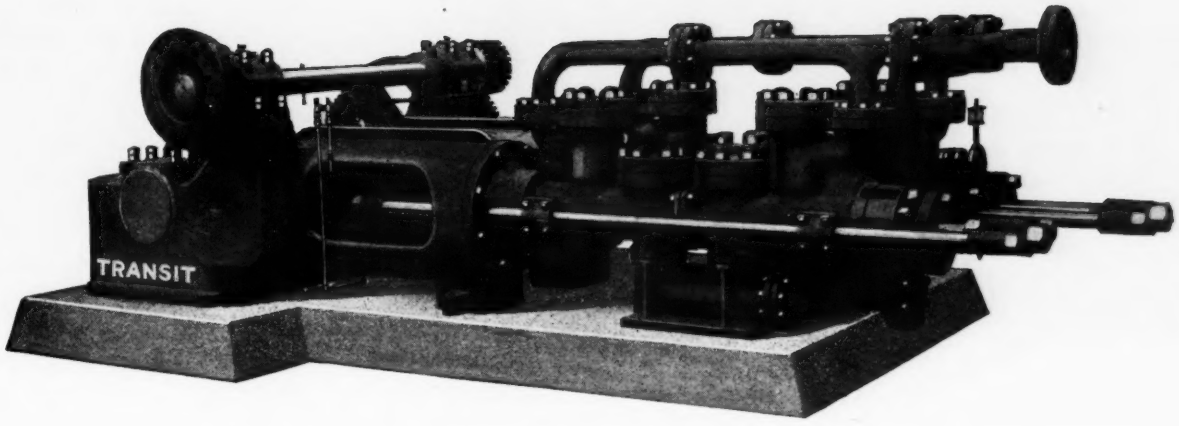


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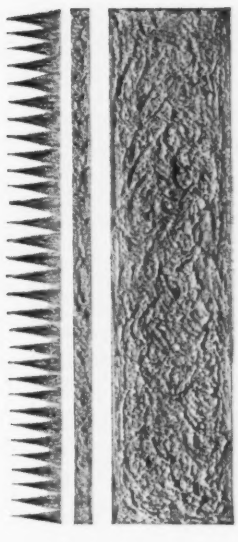

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An early type Cross cracking unit of small capacity installed at a Texas refinery

units, particularly to increase throughput capacity.

Other possibilities which the refiner may consider in revamping his existing Cross units include:

1. Incorporation of crude skimming in the cracking plant through maximum utilization of residual heat.

2. Incorporation of means for simultaneously re-forming low anti-knock straight run naphtha with cracking of residual or overhead cracking stock.

3. Conversion of units to the 100 per cent distilled circulation cycle to lengthen time on stream before cleaning is necessary.

During the past year one re-

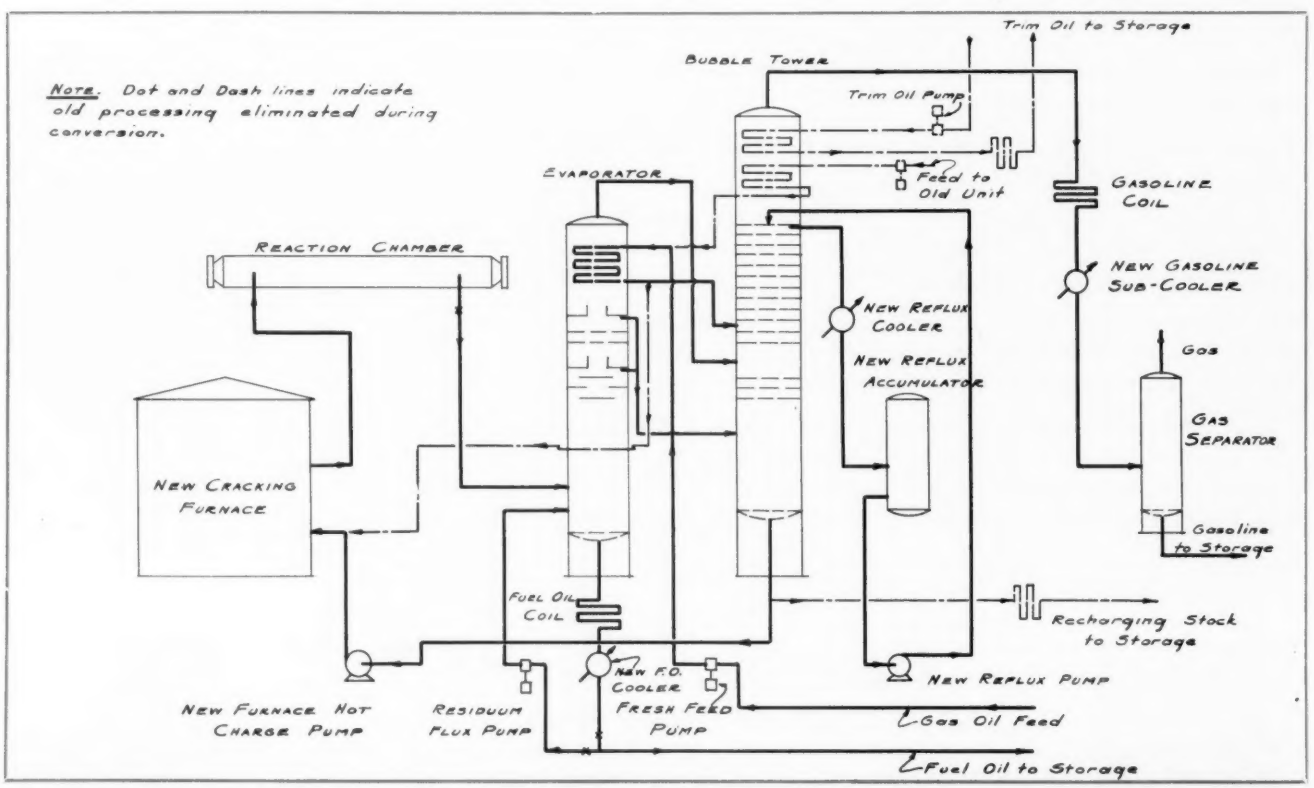


**Fig. 1—2000-barrel cold oil Cross unit converted to hot oil operation. Former flow indicated by dot and dash lines. (Courtesy M. W. Kellogg Co.)**

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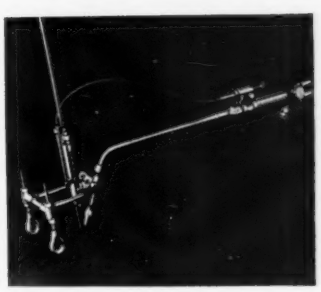

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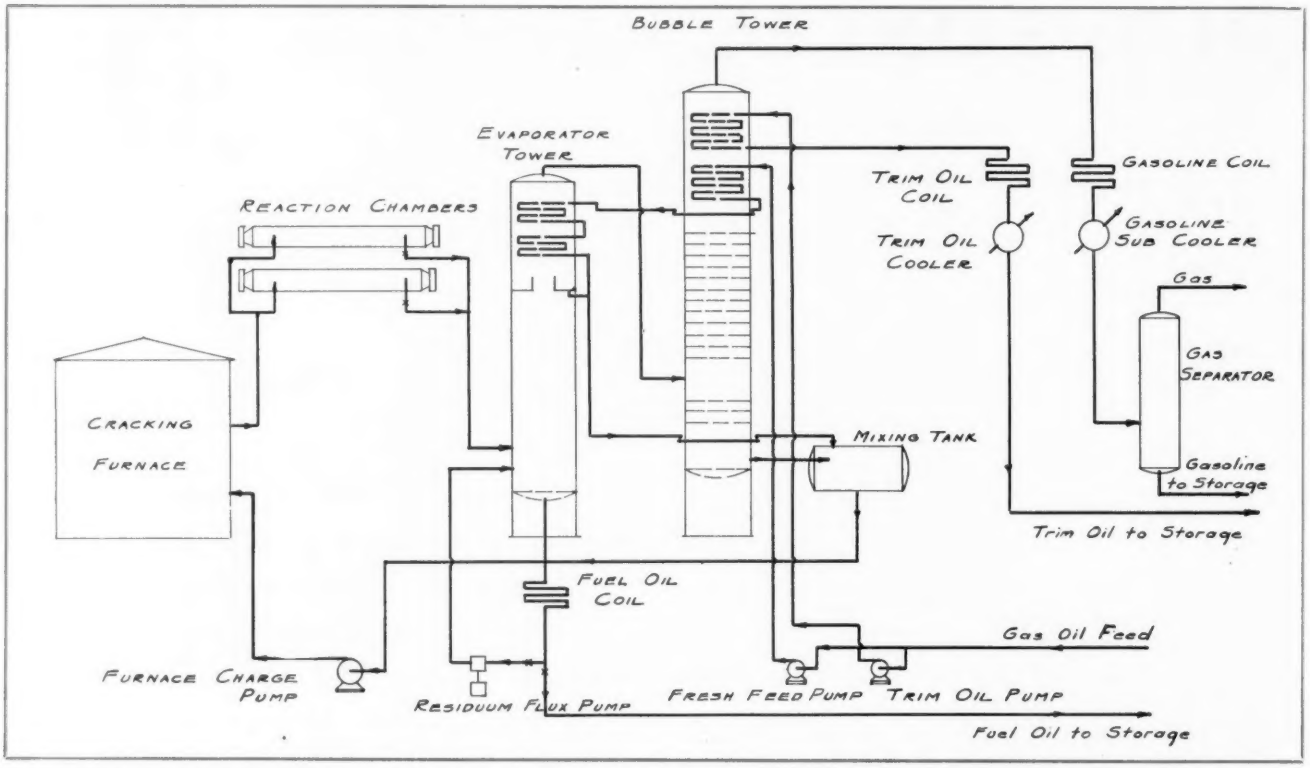


**Fig. 2—Hot oil Cross cracking unit before conversion into combination skimming and cracking plant. See Fig. 3 for flow through converted unit. (Courtesy M. W. Kellogg Co.)**

finer who had two cold oil Cross units installed in 1925 remodeled them to the hot oil cycle. Fig. 1 shows the changes made in the old unit in remodeling. The dotted lines show the flow through the unit under the old scheme, and the solid lines show the changes that were

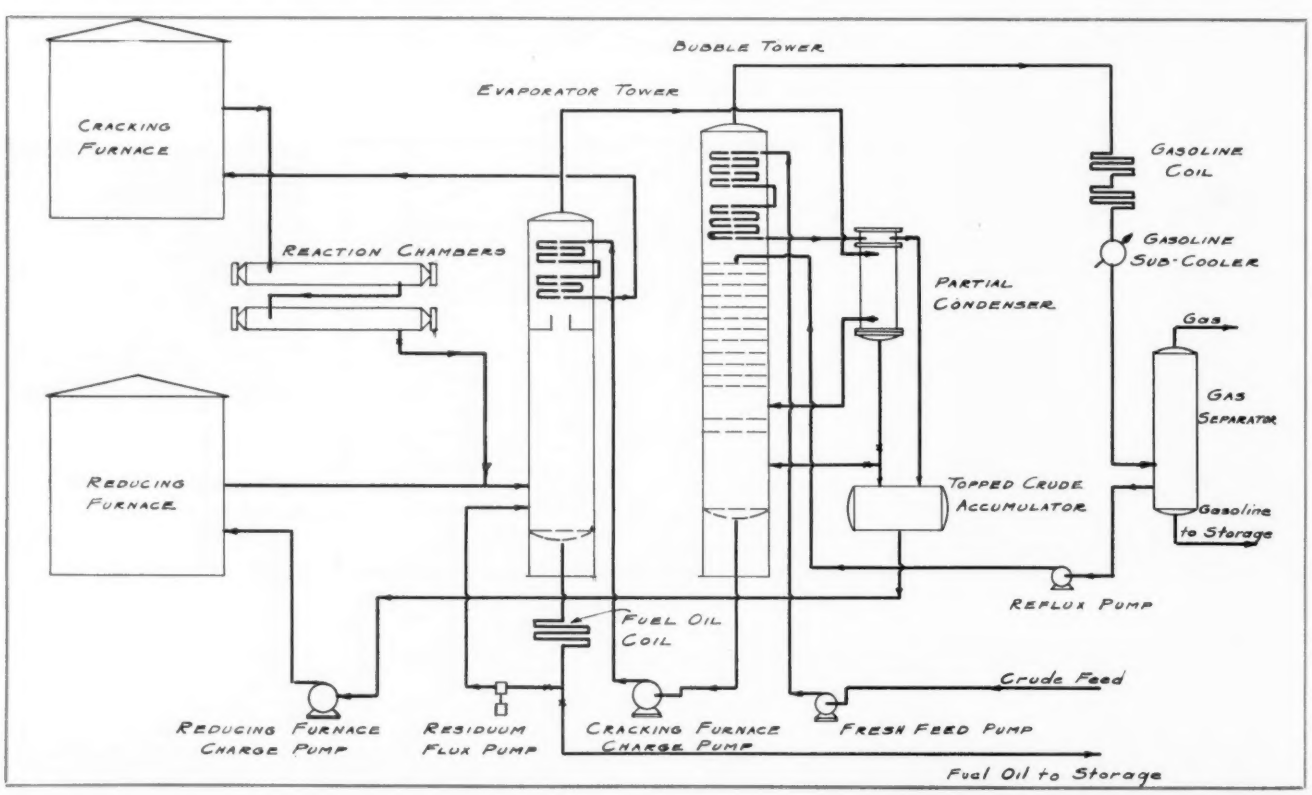


**Fig. 3—Cross unit after conversion from hot oil cycle as shown in Fig. 2 to combination skimming and cracking type of operations. (Courtesy M. W. Kellogg Co.)**

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made and the present arrangement.

The old trim coils were removed, a new reflux cooler and accumulator were added, a new reflux pump installed which pumps the "open" reflux oil into the tower at the top. Feed preheater coils which were also in the top of the tower were removed and the gas oil feed, instead of passing through these in the bubble tower is pre-heated in coils in the top of the evaporator from which it is flashed in the bubble tower at a point above that where the cracked oil enters from the evaporator top. The old system sent the charge direct from evaporator coils to furnace. Condensers were enlarged and a new aftercooler added to reduce the gas losses with the larger amount of material handled.

Prior to remodeling, each unit had been handling for five years an average of 2000 barrels of virgin gas oil and recycle stock. Yields had been about as follows:

| | Barrels | Per Cent |
|---|---|---|
| Cracked gasoline .... | 600 | 30 |
| Recharging stock .. | 1000 | 50 |
| Fuel oil ..... | 300 | 15 |
| Gas and loss..... | 100 | 5 |

After the remodeling was completed each unit was handling about 2300 barrels daily of 35 gravity Mid-Continent gas oil. Yields have been about as follows:

| | Barrels | Per Cent |
|---|---|---|
| Cracked Gasoline (415 E.P.)..... | 1400 | 61 |
| Fuel Oil (9° A.P.I. 22 Vis. Furol @ 122° F.) ..... | 575 | 25 |
| Gas & Loss ..... | 322 | 14 |

In many instances it would be possible to remodel existing cold oil units to realize comparable improvement in charge and yield without installing as much new equipment. This, however, depends on the condition of existing equipment and the mechanical standards required of the plant.

In some cases refiners have remodeled existing hot oil cross units to increase plant capacity and at the same time make the unit capable of operating on crude rather than overhead charging stocks, thus eliminating the skimming step.

A typical example of this type of modernization was carried out at the plant of one refiner equipped with four 3000-barrel hot oil units built in 1928 to handle gas oil and produce about 2000 barrels of cracked gasoline daily.

This refiner wished to revamp the installation so that each unit would take a daily charge of 7000 barrels of 20 gravity black crude containing about 10 per cent straight run gasoline.

The flowchart in Fig. 2 shows the operation of these units under the old system; Fig. 3 is the new plan with a second furnace and rearranged flow.

To accomplish this result it was not necessary to make many changes in the tower equipment except that services of reflux coils were changed to permit topping of the crude and preheating of the feed to the cracking furnace.

Vapor line exchangers were installed between the evaporator and the bubble tower for additional preheat to the crude feed and to thermally balance the system. The two reaction chambers are in series in the new set-up, instead of in parallel as in the old system.

Performance of the units before and after remodeling was about as follows:

| | Original Operation | New Operation |
|---|---|---|
| | 30 Gr. | |
| Charge | Gas Oil | 25 Gr. Crude |
| Per cent off at 400° F. .. | 0 | 7% |
| Barrels per day..... | 3000 | 7700 |
| Distillate | | |
| Gravity ..... | 54 | 54 |
| End Point .... | 437 | 409 |
| Barrels per day ..... | 1800 | 3585 |
| Fuel Oil | | |
| Gravity ..... | 8 | 10 |
| Vis. Furol @ 122° F. ..... | 26 | 180 |
| Barrels per day ..... | 960 | 3510 |
| Gas | | |
| Per Cent Yield | 8 | 8 |

There are numerous possible arrangements for converting an existing Cross unit handling gas oil to operation on crude, separating the straight run gasoline from the stock and cracking the topped crude to ultimate yields of cracked gasoline and fuel oil. If the gasoline production of the plant is not to be increased the topped crude may be introduced directly into the base of the evaporator for viscosity breaking and the preparation of a 100 per cent distilled stock as furnace circulation to insure long operating periods.

Such a change may be made by adding a crude flash tower for straight run gasoline production and some additional pumps and exchangers.

Should the refiner desire to increase the capacity of the plant in cracked gasoline production as well as revamping to accommodate crude itself, an addition furnace would be necessary to lightly crack the topped crude and distill a gas oil as charging stock for the existing furnace.

The reforming of the heavy naphtha may be accomplished by withdrawing this stream from the side of the crude flash tower, and adding a high pressure pump for the introduction of the naphtha into the cracking furnace.

All changes of processing should be made with a view toward the selective cracking of the individual stock for the formation of maximum yields of high quality products, unifying the various operations as much as possible in order to eliminate all unnecessary steps which add to the cost of manufacturers.

## NEW EQUIPMENT

**The Graver Tank & Mfg.** Corp., East Chicago, Ind., has appointed W. L. Norman sales representative for central and northern Illinois, succeeding P. J. Lofy. Mr. Norman has been with the Graver company for eight years, beginning in the estimating department and working in many other departments. Lately he has been an assistant to H. S. Graver at East Chicago. He will work out of Ottawa, Ill.

* * *

**"The Armstrong Trap Magazine"** is published monthly by the Armstrong Machine Works, Three Rivers, Mich., for users of steam traps in different industries.

# Evaluation of Extreme Pressure Lubes Requires Endurance Test

By C. M. Larson*

*(Presented before American Petroleum Institute, Chicago, Nov. 10-12)*

CURRENT research work carried on by the author in the field of applications for extreme pressure lubricants disclosed not only the benefits derived from their use in the lubrication of hypoid gears, free wheeling transmissions and speed reducers, but a considerable saving in time and labor from their use as break-in oils in new engines.

The film strength testing machine in operation at the East Chicago laboratory of the Sinclair Refining Co. as shown in Fig. 1 is designed after the pin machine devised by General Motors and is an improvement over the one[1] being operated by the Sinclair Refining Co. in the east. Procedure followed is given herewith:

1. (a) Wash the pin and bushings in sulfur-free acetone and rinse in same.
   (b) Allow to dry.
   (c) Dip pins in the lubricant to be tested and assemble.
   (d) Place in holder and then in machine coupled to a synchronous motor.
   (e) Heat lubricant to be tested to 100° F. and fill container.
2. (a) Start motor which synchronizes itself through automatic switches. The current at two periods during the starting mounts to over 50 amperes, which is the limit of the switch board instrument scale.
   (b) Now adjust the field so that the current is at the minimum, finally reading the current on the 5-ampere scale of the precision ammeter. The latter instrument is normally short circuited and can be read by placin the hand on the "Knob 12." The 10-ampere scale is used during the test.
3. (a) As soon as the field is

*Supervising Engineer, Sinclair Refining Company, New York, N. Y.

[1]"Classifying Transmission and Rear Axle Lubricants", SAE Annual Meeting Jan. 19-23, 1931.

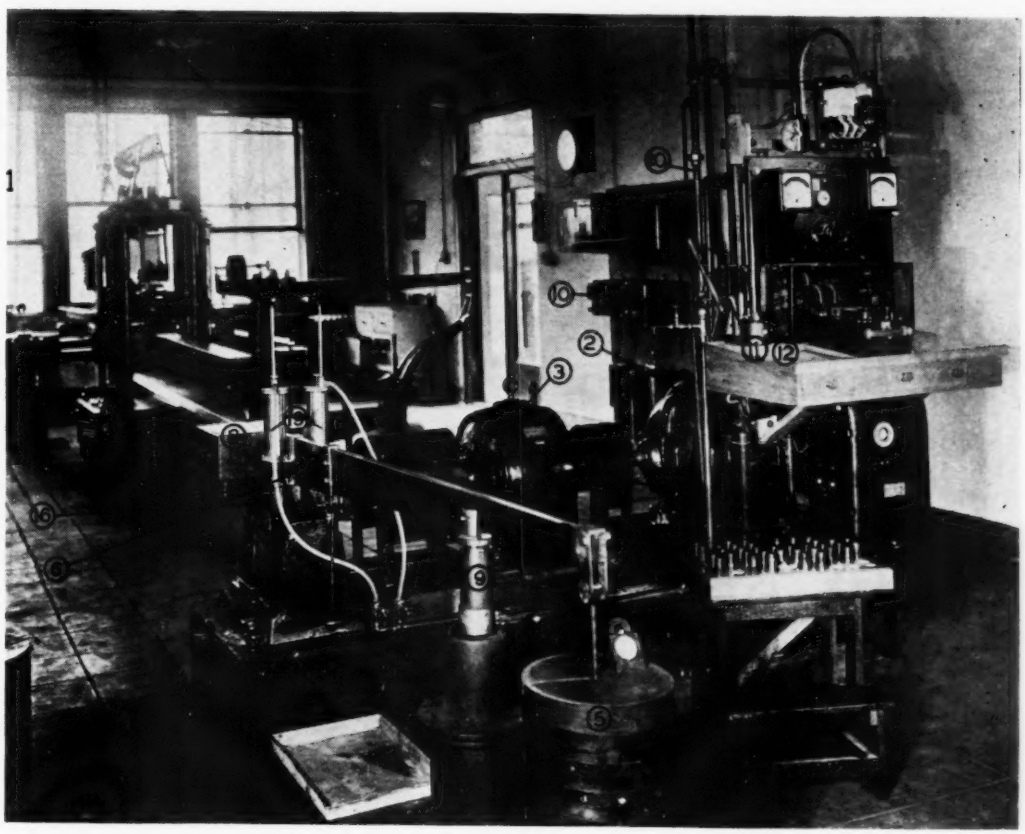


**Fig. 1—Modified General Motors film strength testing machine at the East Chicago laboratories of the Sinclair Refining Co.**

Now is the best time in history to install the Dubbs cracking process

Because—

..Dubbs units can be built today at the lowest cost in years—material and labor costs are down

..Dubbs units will make the highest yield of anti-knock gasoline—up to 74 octane number or higher—at lowest cost And motorists want Dubbs anti-knock gasoline

..Dubbs licensees get the benefit of all improvements and

developments made and to be made by Universal's staff of technologists These improvements have been coming thick and fast

The refiner with the latest Dubbs cracking unit, built at lowest cost, is sitting pretty

Universal Oil Products Co
Chicago Illinois

Dubbs Cracking Process
Owner and Licensor

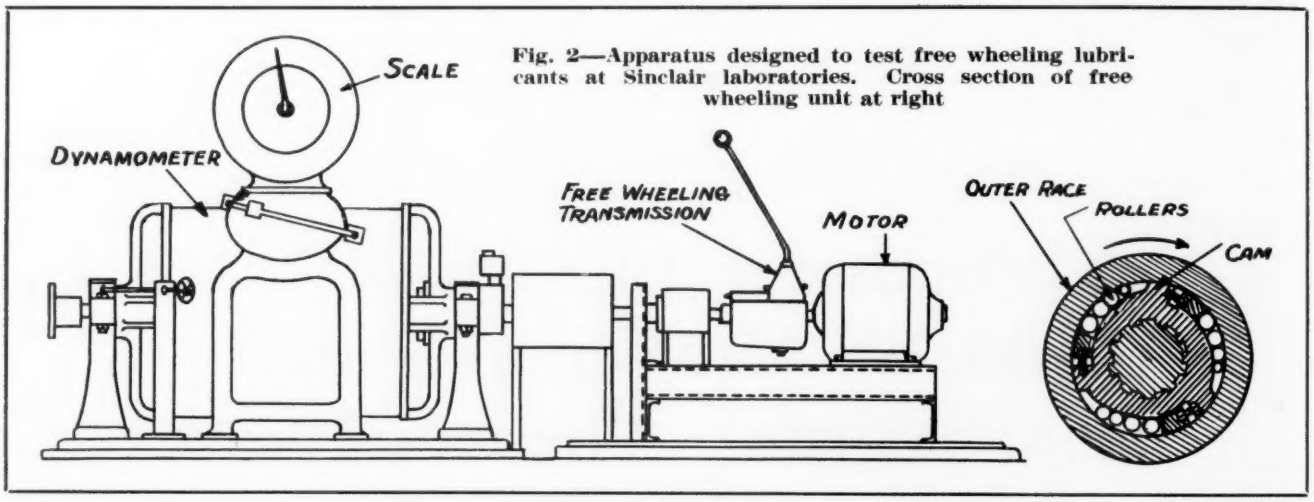



**Fig. 2—Apparatus designed to test free wheeling lubricants at Sinclair laboratories. Cross section of free wheeling unit at right**

adjusted to unity power factor, 25-pound weights are added to the outer poise, which applies a load of 1000 pounds per square inch to the center bushing.

(b) Weights are added every 10 seconds, the amperes being recorded 2 seconds before the addition of each weight.

(c) The current increases gradually with each increment of load.

(d) Just before the pin fails, the ammeter needle jumps to a higher value and the current becomes unsteady.

(e) With skill one soon learns just how the test can be run so that the maximum load can be applied and test completed without seizure of bushing to pin.

(f) Just at the instant of failure, the hand is removed from the short circuiting button, the Lever (No 10) is thrown down, which applies air to the Jack (No. 9) removing load instantaneously, stopping the motor at the same time. This operation is accomplished in less than 0.25 second.

4. The pins are inspected and graded as to condition of surface, the results being recorded on a percentage basis. A perfectly smooth pin is graded as 100 per cent.

### Lubrication of Hypoid Gears

Knowing that a practical service test is the ultimate proof of quality, extreme pressure lubricants, that were found under the foregoing test to withstand a pressure of 25,000 pounds per square inch without "seizure" and consequently reported as perfect, were actually checked in a hypoid gear set.

In the majority of cases with a lubricant so reported where the pin under the applied load of 25,000 pounds per square inch received a rating of 100 per cent, the gear teeth were neither scored nor scratched. In several instances, however, with lubricants where the pins received the required "perfect" rating, actual service tests in a hypoid gear set resulted in failures.

It was then decided to run a six-hour endurance test on the various lubricants and for this purpose the Cadillac transmission-rear axle gear set was used. After each run, the lubricants were again subjected to a pressure test on the film strength testing machine and it was found that those lubricants that passed the 25,000 pounds per square inch mark, where the pins were reported to have a 100 per cent "perfect" rating, both before and after the six-hour endurance tests, performed best in the hypoid gear set. Those lubricants, which failed to properly lubricate the hypoid gears, failed on the second run in the film strength testing machine at 17,000 pounds or less.

Analyses of the lubricants and the various results obtained, showed that in one instance, where the material used to create additional film strength in the lubricant was a sulfur chloride, the chlorine was liberated under the heat of operation. In another instance, the product used combined with the metal to form a "new skin" immediately scuffing commenced, the film strength of the lubricant being reduced accordingly by this chemical process. Other check runs showed that oxidation or settling out of the chemical compound was the cause of reduced film strengths and ultimate failures during the hypoid gear test.

Of course, under no circumstances, should a hypoid gear set be washed out by a substance which might tend to increase the film strength of the lubricant. The selection of cleansing fluids should be confined to a choice of either kerosine or sulfur-free acetone in order to ensure comparable results.

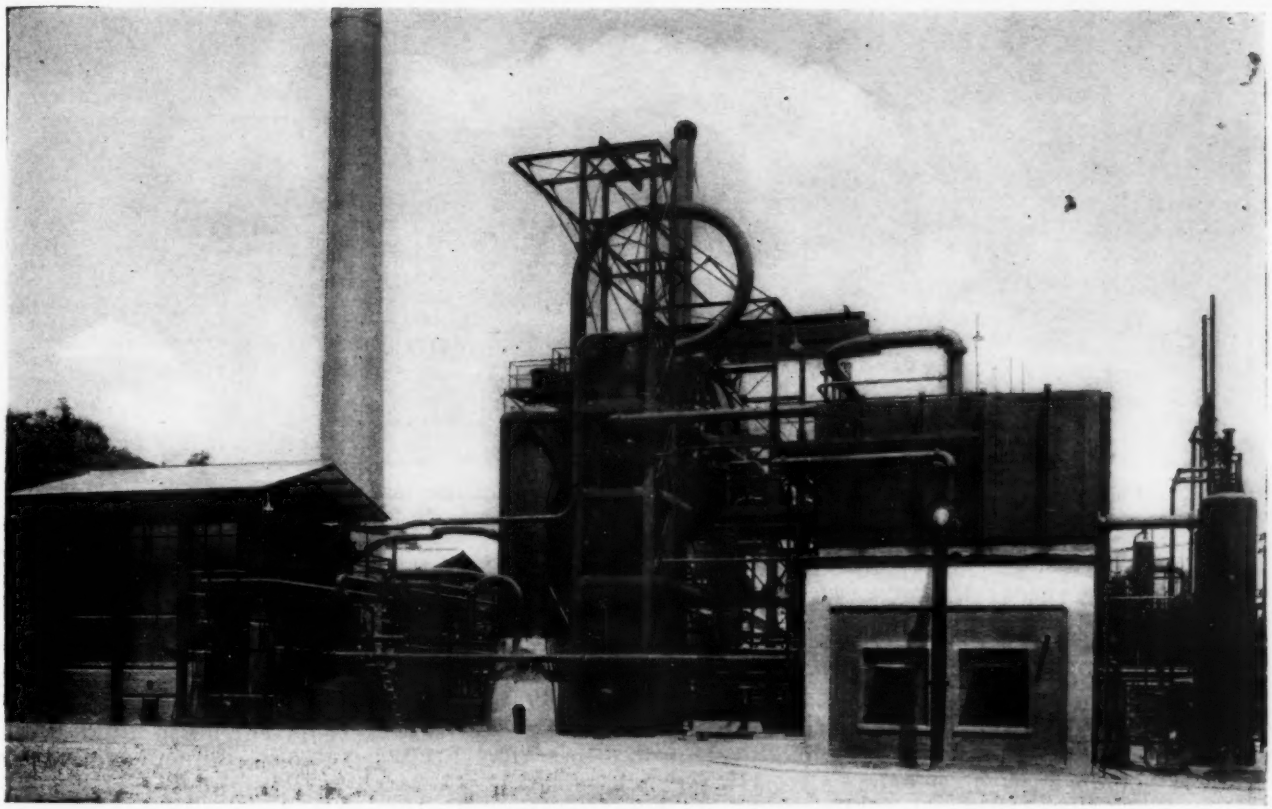
### Free Wheeling Transmissions

Another phase of the investigation was centered around the lubrication of Free Wheeling Transmissions. The test apparatus designed for this purpose is shown in Fig. 2.

1. (a) Each sample of lubricant to be tested is allowed to settle for 24 hours and is then decanted.

(b) Centrifuge one quart for film strength test.

(c) Determine film strength by same pro-



# Low Temperature Distillation

This atmospheric-vacuum distillation unit is designed for rerunning pressure distillate at a maximum temperature of 275 deg. F. in the system. Distillation must be at low temperature to secure gasoline with a maximum color stability and a minimum gum content.

The Foster Wheeler Corporation has constructed distilling equipment in all parts of the world, and offers its experience and engineering service in the study of any refining problems that you may have under consideration.

**FOSTER WHEELER CORPORATION**
**165 Broadway, New York, N. Y.**

**Foreign Associates:**
**Foster Wheeler Limited, London, England**
**Societe Anonyme Foster Wheeler, Paris, France**
**Foster Wheeler Limited, Toronto—Montreal, Canada**

***Branches in Principal Oil Centers***

# FOSTER WHEELER

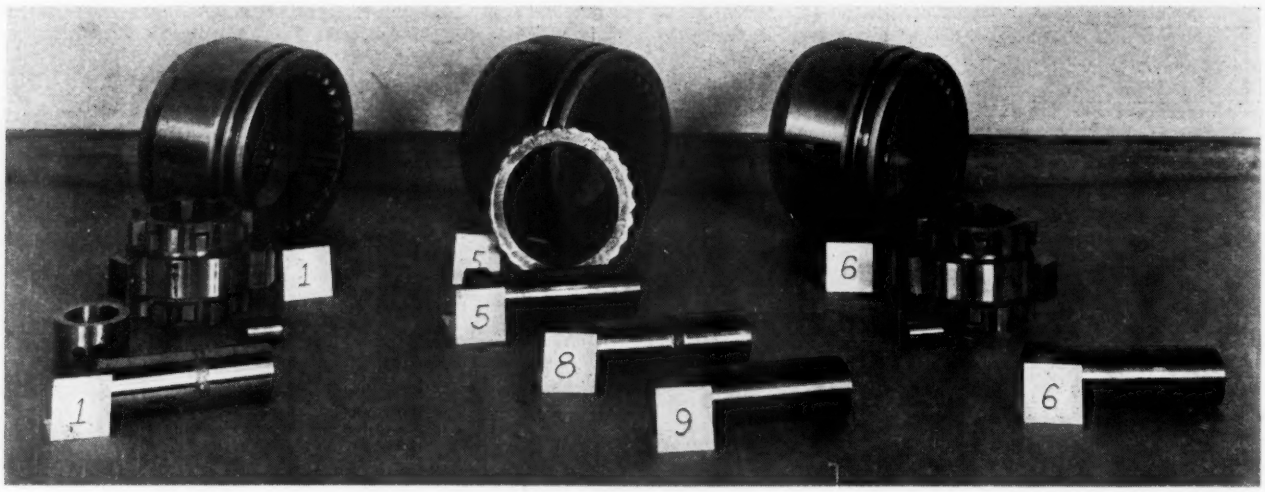



**Fig. 3—Free wheeling transmission parts and film strength test pins after various test runs**

cedure used in hypoid gear research.

2. (a) The dynamometer speed in the free wheeling transmission setup test is held at 500 r. p. m. while the propeller shaft is allowed to turn at 2800 r. p. m. The position of the transmission gear shift is held in the free wheel position.

   (b) Five pints of the lubricant are put in the transmission and the entire assembly is chilled to 15° F. for test run. Oil temperatures in the gear case are read every half hour.

   (c) At the end of five hours running, remove "pineapple" assembly and take apart for examination.

   (d) Inspect "pineapple" (free wheeling clutch element).

3. Run tests on used sample for film strength determination. Fig. 3 shows film strength test pins and free wheeling transmission parts after three representative runs on extreme pressure lubricants and were so chosen to show what may be expected with various lubricants in actual service, this test being equivalent to approximately 10,000 miles of car driving.

It will be noted that the straight mineral oil (as can be seen from the pineapple, cam and rollers as well as the pin and middle bushing from the film strength test, which are labeled No. 1) failed due to the fact that the rollers, which are turned at a speed of approximately 35,000 r. p. m. by the outer race and which act as grinding wheels on the cam, cut through the oil film. The film strength test pin seized at 6500 pounds per square inch.

Extreme pressure lubricants having film strengths of 15,000 pounds per square inch, as determined on the film strength testing machine, show none of this gouging of the cam by the rollers, as will be seen by the parts labeled Nos. 5 and 6, and were consequently about to be passed as perfect when it was discovered the oil used for run No. 5 had been compounded with a fixed oil fused with sulfur, and had caused a gummy residue to be deposited on the outer race and retainer rings, as is clearly shown.

A test using a Pennsylvania oil of S. A. E. Viscosity No. 50 blended to have a film strength of 15,000 pounds per square inch resulted in a perfect cam and rollers. Such an oil was used for run No. 6.

The same lubricant as used in run No. 6, was diluted with 15 per cent kerosine and used in run No. 8. The film strength of this mixture was only 12,000 pounds per square inch ultimate. The pin seized and was scored as shown in Fig. 3 (No. 8). The cam and rollers, not shown, were not as free from scores as No. 6. This might indicate that 12,000 pounds per square inch minimum is necessary to insure satisfactory performance in a free wheeling transmission. The 15 per cent dilution produced an oil of about the same viscosity as S.A.E. Viscosity No. 20.

### Speed Reducers

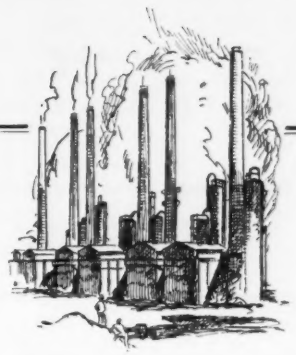
Tests run on a Falk type 10 HC Speed Reducer showed that with straight mineral oils it was necessary to use an oil having a Saybolt viscosity of 750-1000 seconds at 100 degrees Fahr. and 59-86 seconds at 210 degrees Fahr. By taking an oil of 100 seconds Saybolt viscosity at 100 degrees Fahr., which fails at 3500 pounds per square inch on the film strength machine, and compounding it so as to obtain a film strength of 13,-500 pounds per square inch with a resulting Saybolt viscosity of 145 seconds at 100 degrees Fahr. and 42 seconds at 210 degrees Fahr., the speed reducer ran cooler with a higher mechanical efficiency than it did with straight mineral oils. The gear tooth surfaces were in very much better condition at the conclusion of the test.

### Break-in Service

A field for the further application of extreme pressure lubricants was found to lie in the lapping in of internal combustion engines. Due to the friction set up in the operation of an engine when first assembled because of small piston and bearing clearances, it has become standard practice to run a new engine for several hours first by belt drive and then under the engine's own power before pronouncing it ready for service.

If an engine is raced or driv-

# Anti-knock gasoline
## *from old cracking units*



DURING the past five years plant equipment has been redesigned and developed to a greater extent in the refining of petroleum than in any other process industry. This change has been largely necessitated by the altered specifications of the products to be made.

Today there is an outstanding demand for anti-knock gasoline. It is a demand that again calls for a modernization of cracking facilities. Existing units, even though they were installed only a few years ago and still are in good condition, are unable to meet the present new standards. However, this disadvantage can be overcome by a revision in the method of processing and by the addition of suitable improvements.

As a result of intensive research, The M. W. Kellogg Company is in a position to recommend the proper conditions for the production of high anti-knock gasoline from various stocks.

THE M. W. KELLOGG COMPANY
225 BROADWAY NEW YORK, N.Y.
LOS ANGELES, CAL., 1031 So. BROADWAY TULSA, OKLA., PHILTOWER BLDG.

KELLOGG

*Kellogg products include Cross, Holmes-Manley, and de Florez cracking units; de Florez furnaces and temperature control apparatus; pipe stills; Pacific Centrifugal Pumps; absorption, stabilization, and treating plants; Masterweld pressure vessels; complete refinery and power plant piping*

en at too high a speed prior to the surfaces being properly lapped in, the pistons will scuff or the cylinders become scored because the frictional heat generated greatly thins out the oil enabling the high spots to puncture the oil film.

In order to check this phase, a 300 H. P. marine engine was selected for the test. In the case of an engine of this type in production, it takes from eight to twelve hours using an S.A.E. Viscosity No. 60 oil to properly limber it up before the engine can be given a full power run. Even then not all engines are passed as satisfactory, as some are rejected due to scored cylinders.

When an oil similar to the one referred to in the speed reducer test as giving such splendid results, was used in this particular engine, the lapping-in period was reduced to three hours. In other words, the required number of feet of travel of the pistons, which under the old method took at least eight hours, was accomplished in this case, due to the lighter viscosity and higher film strength of the oil in three hours.

With the use of the extreme pressure lubricant, the bearings, pistons and cylinder walls were in better condition and in place of the surfaces being worn away as is usually the case, they were either rolled or burnished to a mirror like finish. The frictional load showed 14.6 feet/pounds at 1500 r.p.m. against 16.2 foot/pounds obtained with the use of straight mineral oils.

From the foregoing service tests and results obtained, it will be seen that extreme pressure lubricants have a large potential market as stated by Messrs. Mougey and Almen[2], but the testing of these lubricants should be confined to more than one of film strength of the new or unused lubricant.

Extreme pressure lubricants should be checked for film strength both before and after suitable endurance or service tests to ensure against load carrying capacities being lessened, gummy deposits being developed, or corrosion of metal parts amounting to not more than a mere stain taking place while in use.

By checking the film strength in pounds per square inch using the film strength testing machine (Fig. 1) and then making a three-hour endurance run at a reduced load in the same machine and then re-running for a further film strength determination, the film strength stability of a lubricant can be evaluated. An analysis of the lubricant for gum and a corrosive test using metals met with in service both before and after the above test runs should give a satisfactory quality check on a product and ensure its meeting the necessary requirements in service.

[2]"Extreme-Pressure Lubricants," by H. C. Mougey & J. O. Almen, Annual Meeting A. P. I., November 12, 1931; National Petroleum News, Nov. 11, 1931, Page 47.

# NEW PATENTS

**Prepared by R. E. Burnham, patent and trade-mark attorney, 1343 H Street, N. W., Washington, D. C., from whom copies may be obtained at the rate of 20c each. State number of patent and name of inventor when ordering.**

## November 10, 1931

### REFINING

**Refrigeration oil separation**—George W. Watts, Whiting, Ind., assignor to Standard Oil Co. of Indiana. Filed Sept. 25, 1930. No. 1,830,863.

**Art of treating hydrocarbon oils**—Oswald C. Brewster and William M. Perry, Casper, Wyo., assignors to Standard Oil Co. of Indiana. Filed Mar. 22, 1928. No. 1,830,925.

**Filtration of petroleum tars**—Carlyle D. Read, Whiting, and Roger L. Holcomb, Chesterton, Ind., assignors to Standard Oil Co. of Indiana. Filed Apr. 5, 1928. No. 1,830,962.

**Distilling petroleum residuum**—Francis L. Rogers and Claude P. McNeill, Whiting, Ind., assignors to Standard Oil Co. of Indiana. Filed Mar. 17, 1923. No. 1,830,963.

**Conversion of high-boiling hydrocarbon oil**—William E. Warwick, Chicago, Ill., assignor to Standard Oil Co. of Indiana. Filed Nov. 9, 1925. No. 1,830,972.

**Art of distillation of hydrocarbon oils**—George W. Watts, Whiting, Ind., assignor to Standard Oil Co. of Indiana. Filed Mar. 24, 1928. No. 1,831,051.

**Apparatus for the depolymerization of hydrocarbons**—Jean Mercier, Paris, France. Filed Dec. 13, 1928. No. 1,831,185.

**Process for the treatment of hydrocarbon oils**—Jackson R. Schonberg, Westfield, N. J., assignor to Standard Oil Development Co. Filed July 18, 1929. No. 1,831,265.

**Apparatus for cracking mineral oil**—Arthur E. Pew, jr., Bryn Mawr, and Henry Thomas, Ridley Park, Pa., assignors to Sun Oil Co., Philadelphia, Pa. Filed June 28, 1929. No. 1,831,424.

**Activating Fuller's earth and the like**—Harry L. Pelzer, Highland, Ind., assignor to Sinclair Refining Co., New York, N. Y. Filed Apr. 16, 1927. No. 1,831,635.

See pages 76 and 77 for abstracts of new refining patents

**Return bend (in refinery apparatus)**—John E. Getzen and Clarence H. Denicke, Birmingham, Ala., and Morton B. Crowe, Tulsa, Okla., assignors to Stockham Pipe & Fittings Co., Birmingham. Filed Oct. 30 ,1930. No. 1,831,708.

**Art of cracking and coking hydrocarbon oils**—Harry L. Pelzer, Highland, Ind., assignor to Sinclair Refining Co., New York, N. Y. Filed Feb. 18, 1929 No. 1,831,719.

### PRODUCTION

**Well-cementing apparatus** — Samuel J. Murphy, Wink, Tex. Filed Sept. 10, 1929. No. 1,830,851.

**Well-pumping system** — Frederic W. Hild, Los Angeles, Calif. Filed Mar. 15, 1928. No. 1,830,941.

**Bit-holding chuck** — Fred C. Goldsmith, Houston, Tex. Filed April 21, 1928. No. 1,831,530.

### MISCELLANEOUS

**Insecticide** — Frederick W. Sullivan, jr., and Elmer W. Adams. Whiting, Ind., assignors to Standard Oil Co. of Indiana. Filed July 15, 1926. No. 1,830,970.

**Prediluted lubricating oil**—Robert E. Wilson, Chicago, Ill., assignor to Standard Oil Co. of Indiana. Filed July 2, 1928. No. 1,831,053.

**Gear lubricant**—Stanley D. White and Carl L. Knope, Chicago, Ill., assignors to Sinclair Refining Co., New York, N. Y. Filed May 14, 1930. No. 1,831,614.

### MISCELLANEOUS

**Pump (visible bowl dispensing type)**—Leo E. Rush, Indianapolis, Ind. Filed Sept. 4, 1926. No. 1,829,759.

**Pumping power** — Alva L. Skinner. Bridgeport, Ill., assignor to Ohio Oil Co., Findlay, Ohio. Filed Feb. 4, 1929. No. 1,830,568.

**Liquid-dispensing apparatus**—Ernest E. Brown, Home Gardens, Calif. Filed Aug. 11, 1930. No. 1,830,693.

**Oil-dispensing mechanism** — George H. Hartman, Bryan, Ohio, assignor to Aero Equipment Corp., same place. Filed Dec. 20, 1930. No. 1,830,697.

## November 17, 1931

### REFINING

**Apparatus for reclaiming contaminated oils**—Henry H. Moreton, Santa Monica, Calif. Filed Feb. 2, 1928. No. 1,831,875.

**Method of reclaiming contaminated oils**—Henry H. Moreton, Santa Monica, Calif. Filed Feb. 2, 1928. No. 1,831,876.

**Oil-distillation apparatus**—Edward C. D'Yarmett, Kansas City, Mo., assignor to Fractionator Co., same place. Filed Dec. 16, 1926. No. 1,831,906.

# Visiting Around the Refineries

By Arch L. Foster

HYDROCARBONS and alcohols have been synthesized from corresponding fats by high pressure reduction, or hydrogenation, at the Deutsche Hydrierwerke, near Berlin, Germany, by Dr. W. Schrauth and his co-workers, according to a report of the work they have recently carried out. This work was published in the June issue of Berischte (Journal) of the German Chemical Society.

The production of hydrocarbon or alcohol depends on the temperature, pressure and catalyst used. At 200 atmospheres, (3000 pounds approx.), and 350 C., (662 F.), with a nickel catalyst, hydrocarbons with the same number of carbon atoms as the original fat molecule were prepared. Using copper catalyst, at the same pressure and 320 C., (608 F.), the corresponding alcohols are produced. Cocoanut oil has been reduced to give the hydrocarbons and alcohols corresponding; lauric and stearic acids yield dodecane and octadecane, hydrocarbons of 12 and 18 carbon atoms respectively.

Very high molecular weight waxes have been prepared by this method, one of these being a wax of 85 C. (185 F.) melting point, by reduction of the ester of montanic acid with montanic alcohol, the latter prepared synthetically from the original acid by hydrogenation at high pressures.

* * *

H. L. ROBINSON has been made general sales manager for Foster Wheeler Corp., the appointment effective from Sept. 1.

This promotion comes as the result of several years' connection with the company, he having been employed by the old Wheeler Condenser and Engineering Co. before the formation of the present organization. His experience in the business of the company has covered practically every phase of its activities, having been occupied for years on negotiations for oil refinery equipment and contracts, as well as power plant equipment.

His experience with foreign conditions and foreign customers has been very wide. Last year he accompanied J. J. Brown, chairman of the Foster Wheeler board, on an extended inspection trip abroad, they investigated general conditions in the refining and power industries all over Europe, including England, France and Germany.

H. L. Robinson

FORMATION of the International Hydrogenation Patents Co., including German, British and American Oil interests was announced some time ago in Europe. The purpose of the company is the promotion of the refining of oil and liquefaction of coal in all countries outside the United States and Germany.

Organization of the International Hydrogenation and Engineering Co., with headquarters at the Hague, will be completed shortly, the technical staff of which will be taken from the staffs of the interested companies. Thus the experience of all the interested groups represented in the new companies will be available for the development of the new plans for the process. Statements recently made by officials of some of the companies involved indicate that material reductions in the cost of the process have been made, and the quality of the motor fuel produced has been largely improved.

* * *

R. W. LIND, now superintendent of the Altitude Refining Co. plant at Chanute, Kansas, returned from Russia some four months ago, where he spent a year or more as representative of the Graver Corp. of Chicago, in installing refinery equipment, mostly around Batum.

Mr. Lind is an interested and experienced observer of the conditions in that much discussed country, and brought back some very definite and pertinent impressions on the progress of the Soviet government in communizing Russia and her industries. He obtained a rather comprehensive view of the refining industry in Russia, and was permitted to bring back with him a complete set of photographs depicting the life of the people, as well as of the industrial activities going forward in that section of the country.

* * *

J. R. BARROTT is now superintendent of the Bristow plant of Marathon Oil Co. He was formerly at the Boynton refinery of the same company, and last winter spent several months at the plant of the Del Rio Refining Co., at Del Rio, recently purchased by the Marathon organization.

T. L. Miller, formerly assistant superintendent at the Boynton refinery has been promoted to superintendent.

* * *

Joseph V. Barton is analytical chemist at Pure Oil Co.'s refinery at Muskogee, Okla.

**An Open Letter**

The Cooper-Bessemer Co.,
Mount Vernon, Ohio.
Dear Sir:

The other day while waiting for the barbers to submit sealed bids on a hair cut in our Gray Horse tonsorial salon, I happened to pick up a copy of a magazine called Town & Country, so-called because it is circulated only in cities. It seems that some rum king who has been reduced on account of Wall Street to selling from the hip had been calling on our Osages and while here contacted our barbers and left this magazine.

Well, in looking through this journal, I came across an ad wherein you stated that you were prepared to build engines for yachts and promised plenty of cruising comfort and engine reliability if one used your diesels. It struck me that this was right up my alley and that we can do some business, if you will work out the details of what I want.

Down here among the cotton rows and the ciceros we have quite a problem. The oil business is being run by the troops and there are rumors that some of the operators are practically scofflaws when it comes to obeying the orders of the mailed fist, as a poet would say. Some of our wells are in the beds of what are technically known as rivers and others are on the shores thereof. There is at present no adequate way of getting to such wells. The state has no appropriation to buy a horse for our cavalry and, although some of the oil men have been paying the expenses of the national guard while it kept them from producing oil, they refuse to spend money for any means of travel that does not use gasoline.

It occurred to me that what is needed is an amphibian yacht on which the military could visit the wells which cannot be reached by auto. Such a craft would have to be part boat and part tractor. As you may not readily grasp our situation, I will describe to you a typical Oklahoma river, using the Arkansas for purpose of illustration.

This stream begins out in Colorado and winds down through Kansas and Oklahoma and in the course of time delivers its water into the Mississippi. In the early Spring it becomes a raging monster and is then navigable by the biggest ship afloat. This condition lasts a little while, then the water is all gone and navigation, if there were any, would have to be suspended for 10 months, or until the next flood season. At its low stage the river has navigable spots in which yachts could ply, provided they didn't want to travel more than 50 yards. For the most part the river is, as some sage has remarked, "too wet to cultivate and too dry to irrigate." Considerable money has been spent on plans to make this river and certain of its tributaries into arteries of commerce and I understand that the federal government has, with its usual optimism, appropriated some more money to fix up the stream so that we will not have to rely further on the railroads. But, the same obstacle confronts us now as always—what to use instead of water.

Well, you have an idea of our problem. The Cimarron, along which many of our wells are located, the Canadian, which contains part of the Allen pool, and Little River, the location of the large field of that name, all present obstacles to the full enforcement of our military rules. What we need is a vessel that will navigate these streams at all times.

I have in mind a yacht with a retractible set of wheels so that, in the course of its progress up or down one of our oil-bearing rivers, the wheels could be let down so as to travel over the sand bars. It should be built rather broad in the beam, I believe the term is, so that it could navigate, without using the wheels, such water as happened to be handy.

There is another feature that might be added to this vehicle. In some places there is neither water nor land which any set of wheels known to man could traverse and it is in such spots that our best wells are lurking. It is obvious that it would be very easy to violate the orders of the Blue Valley Farmer, the weekly newspaper of our military dictator. So, I suggest that you have the architects who draw the plans for this vessel to include a breather-bag arrangement which could be inflated from the exhaust of one of your engines and thus enable the craft to fly.

You can readily see the advantages of this sort of ship. There will be a considerable demand for it as military rule is extending to all the states, whether they produce oil or not. Huey Long is using militia to perpetuate his reign as governor and up in Iowa the troops are out to see that the farmers do not milk their cows without due process of law. I shouldn't be surprised any day to see similar action to see that Missouri wins a football game.

As you may have read, our governor, "Alfalfa Bill," says he is going to put the state into

the refining and filling station business. With all other locations now taken up, he would have to put his stations in such remote spots as I have described as needing this yacht for patrol purposes. We would be able to get our fuel at his stations and, while I realize that your diesel does not use gasoline, it is my suspicion that it will not be gasoline the governor will sell.

Now, it may be that your engineering department will be puzzled when you ask them to design the kind of yacht I have in mind, but if they are bewildered it is all right, for engineers are usually in a daze over something.

It is my understanding that the engines you have been building for the oil industry have been satisfactory. You've a good name already and if you want to win lasting fame, you will give us the kind of craft we need to keep the old law of supply and demand working.

Hopefully yours,

Ellick Botts,

Consulting Pumper,
Gray Horse, Okla.

* * *

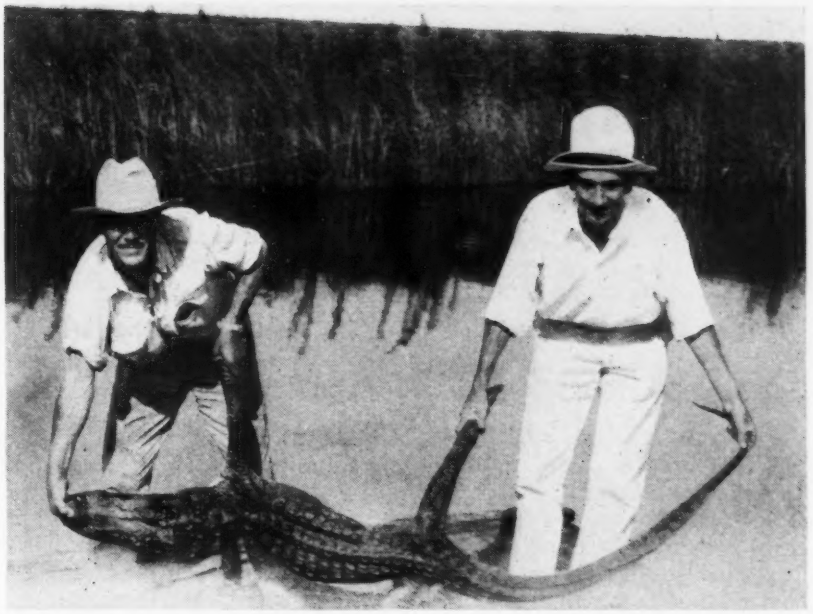
**Says the SO of NJ's "Lamp"**—" . . . when this data is complete . . . etc". P r o o f reader Teagle seems to have muffed one.

* * *

**Pittsburgh will not be the** Pittsburgh the oil producer has known without the Oil Well Supply Co., which is moving to Dallas. The ancient office along the river front was one of the landmarks of the industry. A five-story building in Dallas has been acquired and is being remodeled. Accessibility to the fields where most of the business is done is the reason for the transfer, which includes the entire executive staff headed by President Harris.

* * *

**Max W. Ball, geologist and** oil operator, of Denver, is president of the newly organized Royal Royalties, Ltd. It will deal in Mid-Continent, Texas and Rocky Mountain royalties. Arthur Rich, of Ponca City, is general manager and will be in charge of an office in that city. Main offices are in Denver.



**This action was not an essential part of geophysical work, but it is said to have been a lot of fun. Henry Cortes, in charge of the Gulf Coast geological and geophysical department of the Vacuum Oil Co., is the one at the right and S. H. Stuart, seismograph party chief, is handling the dangerous end of the 'gator. The capture occurred in Coastal Louisiana**

**Died: In Tyler, Tex., Tom J.** Cannon, 59-year-old oil producer. He operated in the Signal Hill field, of California, coming to East Texas several months ago. He owned two producing wells near Overton.

* * *

**Died: In Los Angeles, O. M.** Lancaster, one-time oil producer in the Oklahoma fields. He was 73 years old. He was active in the Glenpool field, entering that development shortly after the discovery well was drilled, and participated in the drilling of many other early-day Oklahoma pools.

* * *

**Superior Oil of California is** opening a regional geology and land office in Tulsa. J. V. Howell is in charge. He is a widely known geologist who was with the old Marland Oil Co. in the Mid-Continent, Texas and Canada. He has recently been engaged in independent work in East Texas.

* * *

**Walter O'Bannon, Tulsa man**ufacturer of pumping equipment, tells this East Texas story in the current issue of his tiny magazine:

A hill billy with more money in his pockets than ever before in his life went, for the first time, to a city where they had pay telephones which required a nickel before they would work. Dropping a nickel in the slot, he raised the receiver. Over the wire came a pleasant voice, "Number, please?"

"Number, hell. I want my peanuts."

* * *

**The National Association of** Purchasing Agents will hold its 1932 convention in Detroit, June 6-9, inclusive. It met this year in Toronto. Peculiar, how the boys like to meet near the international line.

* * *

**Died: In San Angelo, Tex.,** Edward C. McCarnes, petroleum engineer, and former production superintendent of the Transcontinental Oil Co. in West Texas and New Mexico. He had served in several foreign countries, including Roumania.

* * *

**Well, the secret is almost** out. Gov. Cucklebur Bill Murray is on the point of running for president. He has been quite demure about this affair, leaving it to his troupe of trained barkers to break the news to the nation. But, he was seen one day last week with a "Murray for President" button—picture and all—on his coat. He passed off the discovery with the remark that some fellow had had some of them made and had been distributing them.

# Marketer Pays Station Men's Wages In Proportion to Sales

By E. L. Barringer
N. P. N. STAFF WRITER

ANN ARBOR, Mich.

UNDER a new plan adopted by the Staebler Oil Co. here, wages of service station attendants continue on the present scale as long as the sales volume is at the level set by the company. When sales increase part of the gain goes to wages. When they decrease part of the loss is carried by wages.

The plan is of interest to marketers, with wage scales on the decline, and especially where stations are grouped under a common merchandising plan, and not operated as separate units. The plan also is flexible in allowing recognition of sales ability through increase in wages without disturbing income of other employes.

A commission system was installed for stations in towns outside Ann Arbor so that remuneration of attendants would be in proportion to sales. This method was not applicable to Ann Arbor on account of the department store merchandising policy, so a new plan was devised.

The Staebler stations in Ann Arbor are operated as units of a central merchandising system for the entire city. At all stations, a complete line of automotive merchandise and service is obtainable. Stocks at each station depend upon what goods are in greatest demand in that neighborhood. If the particular station does not have goods wanted by a customer the merchandise is obtained promptly from the main one-stop station. Under this system the salesman originally contacting the customer receives his share of credit for the sale. The system was described in NATIONAL PETROLEUM NEWS, May 7, 1930, page 38.

With such a credit system for sales, and the dependence of stations on each other the company worked out its current wage scale. A commission plan would not work because two or more salesmen might have a hand in a sale.

A flat wage reduction was not deemed advisable. The company has worked with its station men for years, at group meetings and individual conferences, to obtain harmony in working out the system of feeding business to other company stations, and to get the co-operation of the men in suggesting merchandising methods.

The first step in the system, as explained by Neil Staebler and Paul Kempf, executives of the company, was a study of sales records for several years.

From these figures a standard of sales by departments necessary to maintain wages at present levels was worked out. This was broken down to monthly figures.

Then the wage scale, paid on an hourly basis, was studied. A definite portion of the wage dollar was assigned to each classification of merchandise sold.

The wage dollar for each employe was broken down to these percentages:

Gasoline 43 per cent.
Oil and lubrication 38 per cent.
Tires 5 per cent.
Kerosine 1 per cent.
Cleaners naphtha 2 per cent.
Tire repairing 4 per cent.
Battery sales ½ per cent.
Battery Rentals ½ per cent.
Accessories 2 per cent.
Car washing 2 per cent.
Shortage allowance 2 per cent.

There has been no percentage set for anti-freeze solution sales, but this probably will be classified under accessories.

Total sales for all Staebler stations in Ann Arbor are lumped together each month, by the departments listed above, and compared with the standard set for that department.

During the first week of each month this data is compiled and a report made to the station men in a sales meeting. Wages paid, under this system are governed by the preceding month's business, and are effective with the second week of the month. The company pays weekly, and the first week in each month is set aside for compiling the wage scale and explaining it to the men.

The company carries half the gain or loss of actual sales compared to the standard set. Thus, if total sales for all departments for a month are 10 per cent below standard, station employes receive a pay reduction of 5 per cent during the following month. The same relation is in force for gains above the standard set.

AS A practical example of the method let us assume that the standard for gasoline sales is 100,000 gallons a month. If September sales are 90,000 gallons then the station men receive a 5 per cent reduction on the 43 per cent of their wage allocated to gasoline, for the four pay days beginning with the second week of October.

This same application is made all through the other departments. October sales will set the wage scale for November, and so on.

The assigning of a percentage of an employe's wage dollar to various departments has its merit in that some departments will be running above the standard set while other departments are running behind.

In winter, for instance, bat-

**Main station of the Staebler Oil Co., Ann Arbor, Mich., with all facilities available to neighborhood stations through telephone or service truck. The company has a department store merchandising policy covering the entire city**

tery sales and rentals and accessories, will naturally be above standard while gasoline and oil may be under. In summer gasoline and oil will be moving above average while departments catering to winter goods are sub-standard.

The plan will be in force for a year to give the company and the employes a full sales cycle for each department.

Since each station employe receives credit for his sales, whether made at his station or sent to another, the company has complete records for the sales ability of all attendants.

When the method was explained to the men the company told them that dead timber would be weeded out of the organization. The company takes many precautions to be fair to its employes before taking such action.

If a station attendant's record merits attention the station supervisor makes a report. This is reviewed by Mr. Kempf, and he talks with the attendant to determine causes for the record and if possible to redeem the man by helping him improve his sales ability.

In introducing the system the station men were called in for a thorough explanation of the plan. They were told that they were in effect stockholders in the company, that the company was in excellent financial condition, but that a readjustment was necessary to insure continuation of this condition. In turn the continuation of the company's good condition assured the men of their positions.

The men agreed that a 12 month cycle would be fair to the company and themselves.

Since the company's merchandising policy makes each station dependent on the others the men could see the fairness of the new wage method in lumping all sales and establishing a standard for the whole rather than a quota for each individual outlet.

The method also insures a continuation of the morale of the men. The work of years of building up co-operation in selling and in suggesting sales methods is not lost.

Initiative of the individual also can be recognized by the company. Each employe's present wage is the base for future pay. If an individual's sales record merits an increase in pay this can be granted, and the percentage of his future wage in relation to sales is based on the higher wage level.

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**Cincinnati Ball Crank Co.,** Oakley, Cincinnati, O., has available new Balcrank push type hand guns for all types of high and low pressure specialized lubrication.

These hand guns, scientifically designed, are hand-balanced. Knurling or hand grip is at the exact point of balance of the barrel, the company says. The guns develop up to 4500 pounds pressure without strain.

The high pressure hand gun is equipped with Zerk adapter over which slips the Alemite adapter consisting of high pressure hose, Alemite nozzle and swizel nut that holds adapter tightly in place, a time saving feature.

The low pressure gun is equipped with curved nozzle that reaches all lubricating points easily.

* * *

**The De Vilbiss Co., Toledo,** has a new catalog giving description and prices of specialty spray-painting outfits for general use.

# New Equipment

## Automatic Sales Registering In Gasoline Dispenser

SELLING of gasoline at the station is put on the same basis in its merchandising, as any commodity sold at a department store, or other retail outlet, through a new dispensing unit developed by Davis Welding & Mfg. Co., Cincinnati.

While the customer at the oil company station cannot have his gasoline, wrapped up in a neat package, actually placed in his hands or delivered to his home, the Recording Dispenser does give him the same physical evidence of the completion of the transaction as the modern store, with the same automatic features that speed up the sale and reduce to a minimum the chance for error on the part of the salesman.

The Dispenser, just now on the market after some years of experimenting, issues to the customer, from the dispensing unit itself, the same type of sales slip that he secures after a purchase in a store. The slip, issued in duplicate, shows the date, amount and grade of gasoline dispensed through the unit, price per gallon, total amount the customer pays, and the number which identifies the particular operator who made the sale.

This information is computed and registered automatically by an Ohmer register, which has been developed for this particular purpose, and is installed inside the housing of the dispensing unit, which is about the same size and shape as the modern gasoline pump. The only part the operator has with the transaction is controlling the flow at the nozzle to the amount the customer calls for and taking the sales slip, as it issues from the unit, presenting one to the customer and keeping one for the station records.

Also, as with modern sales registers, the Davis unit carries forward the total sales for the auditing department of the oil company. This record, preserved within the dispenser and accessible only to an authorized person, carries on an horizontal line the record of each individual transaction, identical with the receipt given the customer, and maintains a constant balance between gasoline dispensed and cash received.

The features of the dispensing unit itself are: nozzle control and electrically operated displacement meter based on Hardoll patents but redesigned for American manufacture and market. It is visible while actually dispensing gasoline. The Hardoll pump was designed in France with special attention given there, because of the higher price of gasoline on the Continent, to features that insure accurate measure at any speed.

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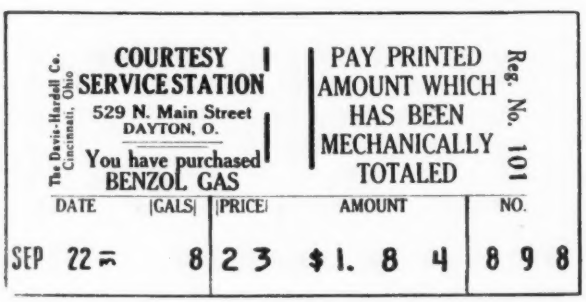
**The Foster Wheeler Corp.** has opened a branch office in Washington, at 726 Jackson Place. J. S. Malseed is in charge. The office will handle inquiries for stationary and marine power plant equipment.



The Davis-Hardell Co. Cincinnati, Ohio

COURTESY SERVICE STATION
529 N. Main Street
DAYTON, O.
You have purchased BENZOL GAS

PAY PRINTED AMOUNT WHICH HAS BEEN MECHANICALLY TOTALED

Reg. No. 101

| DATE | GALS | PRICE | AMOUNT | NO. |
|---|---|---|---|---|
| SEP 22 31 | 8 | 23 | $1.84 | 898 |

(Above) Customers' receipt issued by Davis-Hardoll Recording Dispensometer

(At right) Portion of detailed record carried forward by the dispenser, showing continuous totals on gasoline dispensed and cash received

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | 000 | $0 | 00.00 | | |
| | | | 118 | $0 | 27.14 | | |
| SEP | 22 31 | 5 | 23 | $1. | 15 | 910 | 101 |
| SEP | 22 31 | 20 | 23 | $4. | 60 | 909 | 101 |
| SEP | 22 31 | 6 | 23 | $1. | 38 | 908 | 101 |
| SEP | 22 31 | 5 | 23 | $1. | 15 | 907 | 101 |
| SEP | 22 31 | 18 | 23 | $4. | 14 | 906 | 101 |
| SEP | 22 31 | 3 | 23 | $0. | 69 | 905 | 101 |
| SEP | 22 31 | 1 | 23 | $0. | 23 | 904 | 101 |
| SEP | 22 31 | 5 | 23 | $1. | 15 | 903 | 101 |
| SEP | 22 31 | 6 | 23 | $1. | 38 | 902 | 101 |
| SEP | 22 31 | 12 | 23 | $2. | 76 | 901 | 101 |
| SEP | 22 31 | 4 | 23 | $0. | 92 | 900 | 101 |
| SEP | 22 31 | 10 | 23 | $2. | 30 | 899 | 101 |
| SEP | 22 31 | 8 | 23 | $1. | 84 | 898 | 101 |
| SEP | 22 31 | 3 | 23 | $0. | 69 | 897 | 101 |
| SEP | 22 31 | 7 | 23 | $1. | 61 | 896 | 101 |
| SEP | 22 31 | 5 | 23 | $1. | 15 | 895 | 101 |
| | | | 000 | $0 | 00.00 | | |

# Be SAFE With
# McDONALD
# Foot valves

There's hardly a product more important to your station operations—than Foot Valves. Leaky—they mean inaccurate measure—a digging job—dirt—expense. Poorly made—they simply invite early replacement.

There's no danger of that dissatisfaction with McDonald Foot Valves. Each valve is made of the very highest grade red brass and is given a severe test and thorough inspection before it leaves our plant. They come to you GUARANTEED to hold gasoline. All Foot Valves and Check Valves are carefully wrapped to minimize the danger of dirt that may collect in transit or before valve is used.

Look over these four types of McDonald Foot Valves. There's one that exactly meets your requirements.

Write for prices and further information.

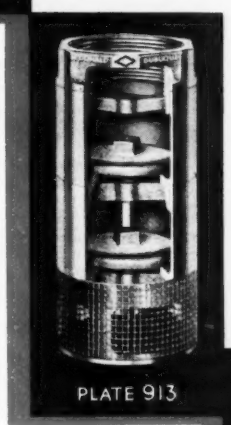



*Plate 913*—Double Poppet Foot Valve. (All Brass) Flat brass seats and discs are carefully machined to insure an absolutely tight fit.

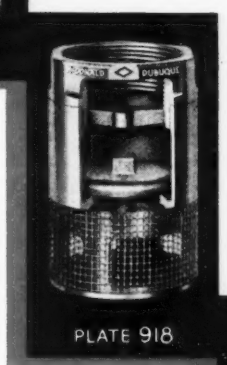



*Plate 918*—Single Poppet, all brass type, otherwise similar in construction to Plate 913.

*Plate 818* — Composition Disc Foot Valve. (Single Poppet). Constant use improves its seating qualities. Disc not affected by gasoline or oil.

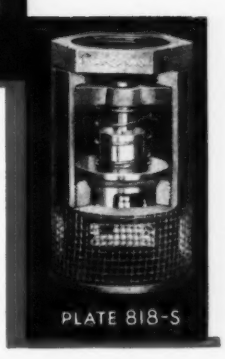


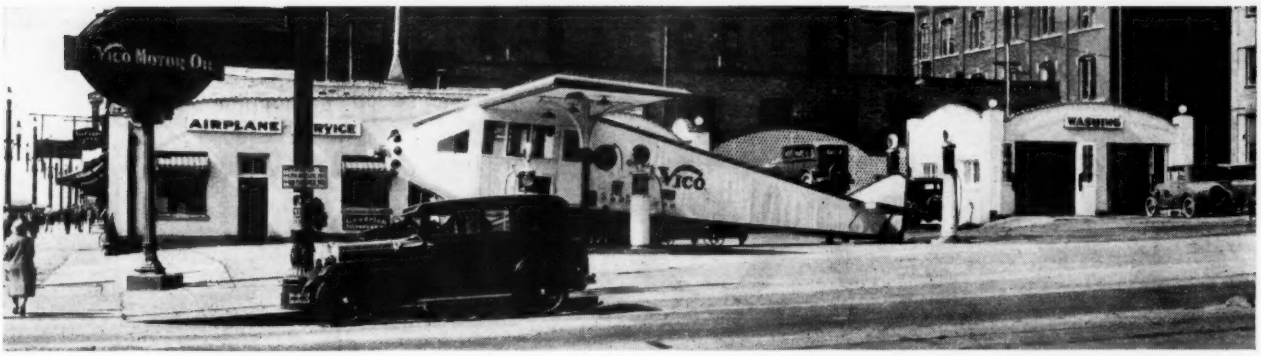

*Plate 818-S*—Similar to Plate 818 but with added feature of spring which prevents disc being removed from seat due to vibration from heavy hauling, passing of trains, etc.

A. Y. McDONALD MFG. CO.
*"The Home of the Swing Joint"*
Dubuque, Iowa

Omaha Minneapolis Des Moines Kansas City
Sioux City Lincoln Denver

*There's a McDonald Distributor Near You*

**Send for NEW bulletin showing latest products**




**Airplane service station of Utah Oil Refining Co. in Salt Lake City. This structure simulates a large cabin monoplane the company used for sales promotion and goodwill building**

# Utah Refiner Predicts One-Stops Will Be Stations of Future

By Roger B. Stafford

N. P. N. STAFF WRITER

SALT LAKE CITY, Utah ONE-STOP service stations, supplying all the ordinary requirements for automobile operation, are the stations of the future, in the opinion of Marion J. Greenwood, vice-president of the Utah Oil Refining Co.

Mr. Greenwood should know whereof he speaks. His company owns a good many of this type of station, and he is the executive in charge of its marketing operations. Of course, he does not expect every station will be a colossal automotive mart but he does expect all will sell more service and a wider variety of automotive goods than is sold at present by perhaps a majority of the oil company stations in the United States.

A few of the Utah Oil Refining Co. service stations are equipped for repair work as well as the usual service of washing, lubrication, gasoline, oil, tires, etc. These stations are operated under lease by agents. However, the company maintains general supervision to see that its standards of service are met.

Four or five of the company's one-stop stations are close to the main business district of Salt Lake City. Some seem to be located too closely together but this close spacing has been the result of taking over existing oil marketing companies and also because the company dominates the market in this region although it follows rather than leads in establishing prices.

One of its downtown stations is called the Airplane station. This station is built in the form of a large cabin monoplane. It has complete facilities for dispensing gasoline and oil. The gasoline pumps were under the wings and at the end of the tail. Motor oil storage was inside the fuselage with outlets on each side of the fuselage.

Today most of the service facilities have been transferred into buildings at the side of the station lot. These buildings contain a tire and accessory store, and the car laundry. Lubrication is done at lifts in the open. This station does not handle batteries.

Merchandise items carried at this station includes: fan belts, lighter fluid, dry cleaner fluid, dust cloths, spark plugs, light bulbs, gasoline tank caps, valve cores and caps, metal polish, body polish, top dressing, liquid wax, radiator cleaner and cement, frost shields, tire repair kits, tire chains, and anti-freeze.

One room of the building that fronts directly on 1st South street, is rented to a barber.

This station handles three brands of olis. It has two grades of Quaker State, which it distributes in Salt Lake City, two grades of Pennzoil, and all grades of Vico, its own brand.

The operators of this station have studied the buying habits of their gasoline customers. They have both visible and meter pumps in the station. One set of pumps is near the State street side of the lots and another set is beyond the airplane's body from the street.

It was found that four times as much gasoline was sold from the pumps farther from the street, and that 90 per cent of the motorists drove up to the visible pumps.

The average gasoline gallonage in Salt Lake City is around 2,000,000 gallons a month. Utah Oil Refining Co. accounts for more than a quarter of this volume through company owned stations operated by lessees. With the gallonage of tank car customers, including Continental Oil Co. and The Texas Co., its output to Salt Lake City mo-

# WHAT *FREE WHEELING* DID FOR MODERN MOTOR CARS

## ...*We have done for*

TRADE MARK REG. 1873

# VALVOLINE

THE *ORIGINAL* PENNSYLVANIA OIL

## *and it means more sales for you!*

IT couldn't be done—but we did it! We've *improved* the best-refined Pennsylvania Motor Oil on the market. We've improved Valvoline by adding to it "Paraflow"—the newest discovery of the petroleum industry.

What a scoop for distributors and dealers now handling Valvoline! What a chance for added sales. Right now, while the weather man is turning fall into winter, you can change the falling motor oil market into a rising one—by pushing a 100% Pennsylvania Motor Oil with a cold test of Zero. Remember what Free Wheeling did for motor car sales last year. That is what Valvoline plus "Paraflow" will do for your oil sales this year.

If you are not now enjoying the big profits that come from selling Valvoline—the *original* Pennsylvania Oil—plus "Paraflow"—you should learn more about the details of the Valvoline Added-Value Franchise and Valvoline's *Depression-proof* merchandising plan. Write or wire for details.

THE VALVOLINE OIL COMPANY

*Established 1866* · CAREW TOWER, CINCINNATI, OHIO

*Division Offices:* New York, Chicago, Cincinnati, Atlanta, Los Angeles. *Refineries:* Warren, Franklyn and East Butler, Pa.
*Foreign Offices:* Liverpool, Paris, Hamburg, Johannesburg, Calcutta, Tokyo, Melbourne, Auckland, Buenos Aires.

**VINCENT LOPEZ** and his Valvoliners are pulling thousands of letters of appreciation from radio fans in your state. Are you cashing in on this headline broadcast by displaying the Vincent Lopez window poster?

VALVOLINE

THE OIL THAT FLOWS AT ZERO

*-and is 100% Pure Pennsylvania*

**A neighborhood one-stop service station of the Utah Oil Refining Co. in Salt Lake City. This station is operated by Milton C. Iverson. It fronts on E. South Temple street. Note the grease gun board with tools for specialized lubrication placed outside the greasing department**

torists is more than half the city's total gallonage.

Its refinery, rated at 6500 barrels of crude daily and with cracking facilities larger than the crude capacity, is a home institution in a region which patronizes home industry first.

The refinery is a development of a small grease plant which Mr. Greenwood and associates started in the early days of the oil industry in Rocky Mountain territory.

The enterprise as it grew needed oil for its grease so it started a small refinery when crude became available. The plant steadily expanded until today its major products dominate the markets of Utah, southern Idaho and southwestern Wyoming.

Its industrial outlets for oil products are in the mining, smelting and agricultural fields. In the automotive field the company sees the need for greater service to motor car owners, as well as an opportunity to make goods other than petroleum products pay part of the expense entailed by convenient purchasing facilities. The one-stop station is the means to that end, Mr. Greenwood believes.

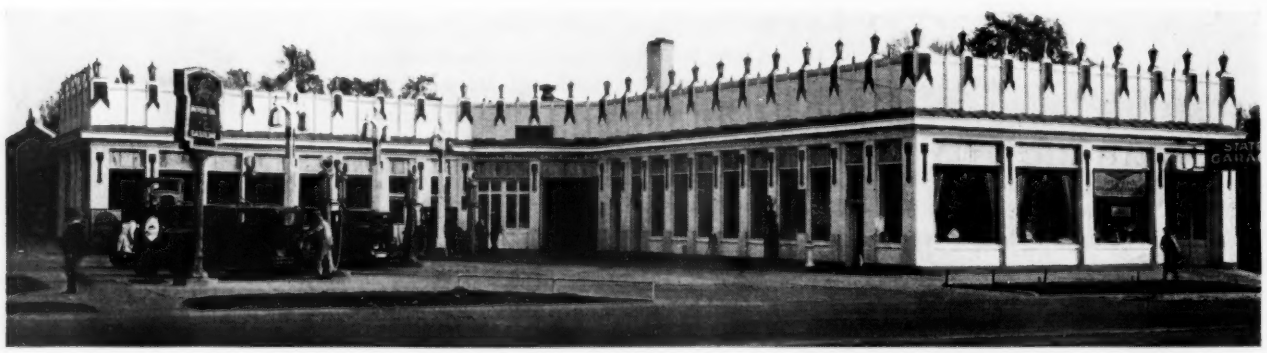
## NEW EQUIPMENT

**In announcing a new line of** flow instruments, the C. J. Tagliabue Mfg. Co. of Brooklyn, is emphasizing the Tag flow recorder-controller for liquids. A number of outstanding features are claimed. One is a chart reading directly in rate of flow but uniformly graduated, made possible by the special design of the differential pressure gage. One leg of the manometer is made progressively smaller in diameter so that the curved cross-section of this leg produces uniform rise and fall of the mercury in the other leg, and uniform motion of the float per increment of change in rate of flow.

Another feature is the method by which a pressure tight bearing is eliminated in transmitting the float movement from inside the manometer pressure chamber to the recording pen outside. The former operates at pipe line pressure, while the latter functions at atmospheric pressure without friction or leakage. Catalogue No. 1020 describes the new line.

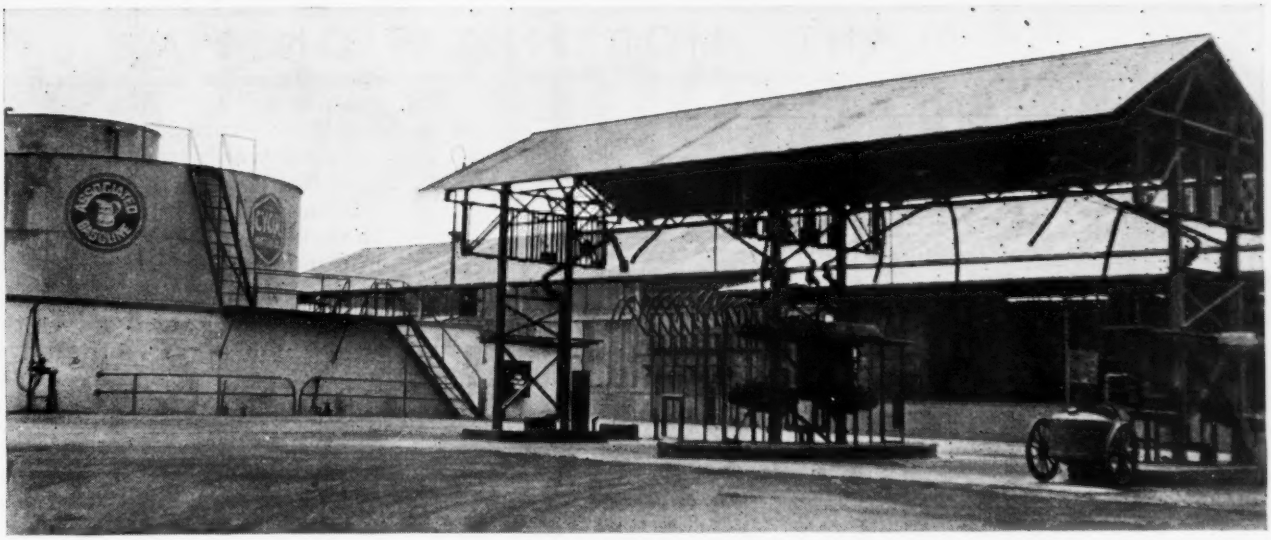
* * *

**Wheeling Steel Corp.'s oil** country tubular goods will be available for world-wide distribution through the sales organizations of the International Derrick & Equipment division of the Internationl-Stacey Corp., Columbus, O. Wheeling welded and seamless pipe will be available in all oil and gas fields.



**A one-stop super-service station of the Utah Oil Refining Co. in downtown Salt Lake City. This station has complete facilities for automotive service as it contains a garage**

ADVERTISING PAGES REMOVED



**Loading rack at Vernon plant of Associated Oil Co., near Los Angeles. A 50-gallon measuring cart for testing accuracy of meters is at the right of the rack**

# California Companies Metering Gasoline Even to Tank Truck Deliveries

By Jack N. Westsmith

N. P. N. STAFF WRITER

LOS ANGELES

LARGER oil companies on the Pacific coast are paying more attention to the use of meters in measuring petroleum products through distribution channels.

The trend is illustrated by the changed opinion of one operator. Six months ago he thought meters still to inaccurate for use in checking and too cumbersome and heavy for tank trucks where space is valuable and dead weight a liability.

Now he believes it is only a question of time, tempered by economic conditions, before mechanical measuring devices will entirely displace stick gauging in distribution from the refinery to the passing of goods to the consumer.

This reversal of opinion, llustrative of that made by a large part of the trade, has been due to a number of factors. These include marked improvement in meter design, which has reduced overall weight and permitted flow rates commensurable with those obtained on unmetred equipment, acceptance of meter accuracy by the customer, and reduction in initial cost of meter installations.

Although it is generally conceded that best results are obtained by installing meters throughout each separate marketing area the initial outlay often has been prohibitive. However, numerous companies have worked out successfully a combination of meters and stick gauging, with the intention of making the changeover to meters as conditions permit.

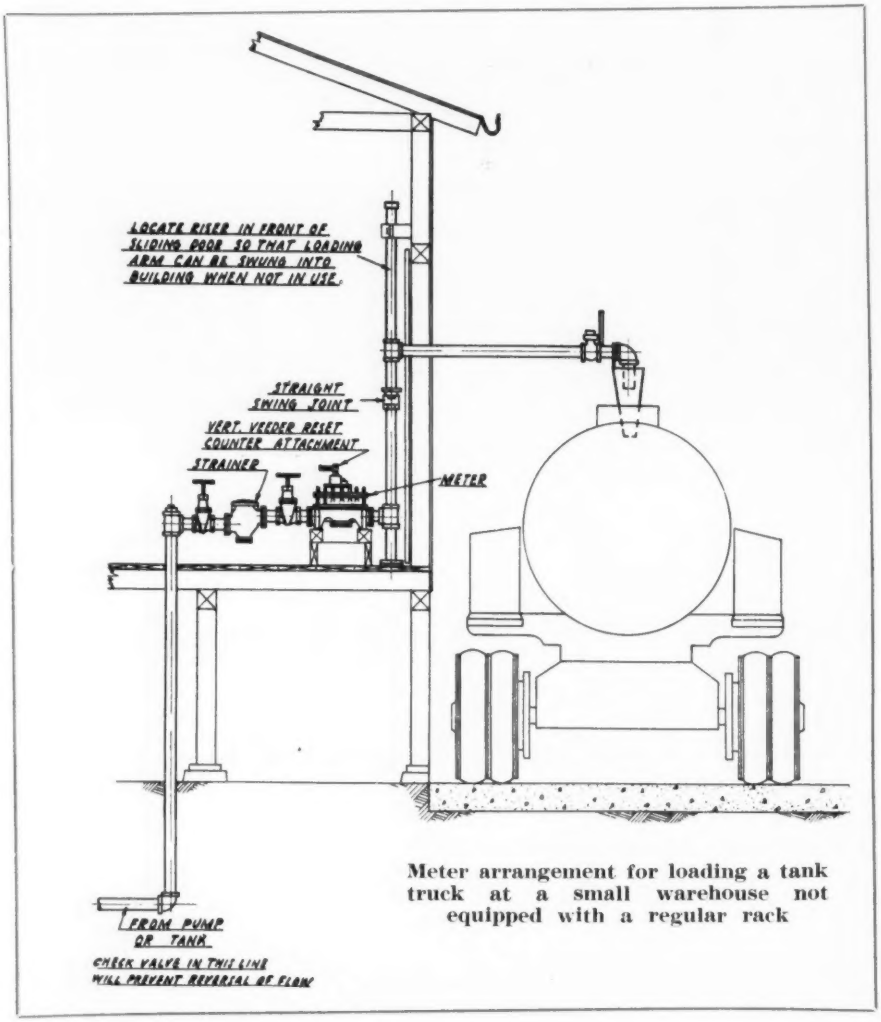
Since the first of this year, specifications on new bulk plants, tank trucks, and service stations, have called for additional metering equipment. Where economically feasible old installations have been remodeled to include these devices.

An outstanding advantage of meters, in the opinion of many, is their positive and visual recording on deliveries. However, this point is outweighed, in the opinion of others, by the ability of meters on tank trucks to expedite delivery.

Under unstabilized marketing conditions in some areas station operators buy on a hand to mouth basis and may demand two loads a day in order to take advantage of a rising or falling market, and it is seldom possible to make full compartment deliveries.

Added to this difficulty is the reluctance of some customers to accept split compartment consignments measured by the gauge stick. Unless the truck is equipped with meters it must make numerous back hauls. This diminishes the gallonage delivered per mile traveled.

Relevant to this last point, certain companies have improved automotive efficiency by careful routing trucks in areas not affected by price disturbances. This improvement is based largely on the ability, through meters, to fill under-


LOCATE RISER IN FRONT OF SLIDING DOOR SO THAT LOADING ARM CAN BE SWUNG INTO BUILDING WHEN NOT IN USE.
STRAIGHT SWING JOINT
VERT. VEEDER RESET COUNTER ATTACHMENT
STRAINER
METER
FROM PUMP OR TANK
CHECK VALVE IN THIS LINE WILL PREVENT REVERSAL OF FLOW

Meter arrangement for loading a tank truck at a small warehouse not equipped with a regular rack

ground storage tanks to capacity.

One company, which has completely meterized its automotive fleet, arranged with its customers to let their gasoline supply fall to the lowest level practicable before calling for another load.

The result was that one truck which in one month made 57 trips, covering 840 miles and delivering 94,000 gallons, was able, under the new plan over a similar period, to deliver 248,000 gallons in 119 trips and traveled only 1420 miles.

In another instance, a truck, which delivered 47,000 gallons in 226 trips, covering 830 miles, was able to deliver 292,000 gallons in 136 trips, covering 1400 miles.

Associated Oil Co., through its use of meters has perhaps gone further in meterizing its marketing equipment than any other company on the Pacific coast.

With a number of its distributing systems completely meterized, Associated has come to rely explicitly on the accuracy of meter readings. The accounting of products moved from refinery to consumer in these areas is based entirely on the daily meter records.

The company has also found mechanical measurement of products going in and out of a distributing system a valuable means of checking against losses not accountable to spillage or evaporation.

Several fundamental characteristics of meter measurement form the basis for this preference over the age-old practice of stick gauging. Putting this in a negative expression: the latter method was often found to be unreliable because of the introduction of a human element that introduced errors due to non-perpendicularity of the gauge stick, and incorrect reading of stick marking, or tank truck markings on delivery units.

Other factors found to throw error into this method of gauging included capillary creepage of gasoline on the gauge stick, unlevel loading or unloading platforms for tank trucks, settling of a tank on its springs, following loadings and prior to unloading.

The amount of error introduced by some of these factors was illustrated in a carefully conducted test run. A tank truck and trailer was loaded at a bulk plant preparatory to supplying a service station approximately 30 miles away.

The fill was stick gauged by the loader and an observer. Upon arrival both the truck and trailer tanks were again gauged by two individuals. A variance of ½-inch and ¾-inch was obtained on the truck and trailer readings, respectively, by the loading and unloading operators, and the observer's gauges differed approximately ¾-inch on each unit.

In this case the error was attributed to the tanks settling on the springs while in transit and to erroneous readings of the gauge sticks. The difference amounted to approximately 20 gallons on the truck and 30 gallons on the trailer tanks on a total load of approximately 5900 gallons.

It is not claimed that this is a criterion of gauge stick operation, as many operators, by careful attention to detail, claim an operating loss of not more than ½ of one per cent, including evaporation and spillage.

In another experiment, using meters, the same company obtained the following results on tank truck and trailer movement from a refinery to a bulk

# Continental's VITALIC Gasoline Hose

*Branches*

Baltimore
Boston
Buffalo
Chicago
Cincinnati
Cleveland
Dayton
Detroit
Memphis
New York
Philadelphia
Pittsburgh
San Francisco
St. Louis
Toledo

**THE EQUIPMENT "deLUXE"**
**For All Types of Pumps**
*made by*
**THE MAKERS OF FAMOUS VITALIC RUBBER PRODUCTS**
***"The Accurately Balanced Line"***

## Continental Rubber Works, Erie, Pa., U. S. A.

Chas. C. Kerner, 152 Chambers St., New York City, Exclusive Foreign Representative

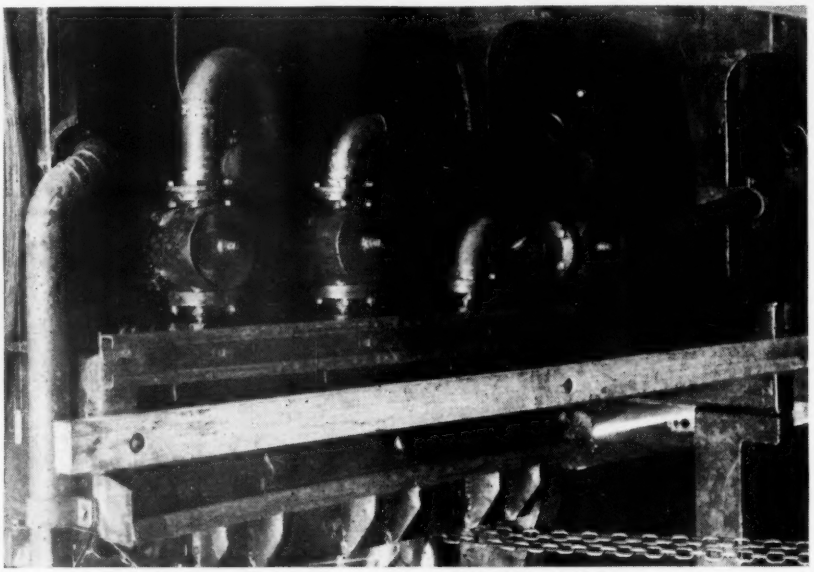
plant, the differences being very small:

| Load | Refinery rack meter reading (gallons) | Bulk plant meter reading (gallons) | Temperature variation at two points |
|---|---|---|---|
| 1 | 6120 | 6125 | none |
| 2 | 6120 | 6105 | * |
| 3 | 6120 | 6128 | none |
| 4 | 5775 | 5773 | none |
| 5 | 6200 | 6190 | none |
| 6 | 6120 | 6119 | none |

*Plus 1 degree at bulk plant.

Usually meters are adjusted to within an accuracy range of 1/10 of one per cent, and are never allowed to exceed ½ of a per cent.

Associated's bulk plant at Vernon, Cal., a suburb of Los Angeles, is a good example of a meterized marketing depot. Tank truck and trailer assemblies with about 6200 gallons capacity are filled through meters at the refinery and transport to this and other bulk plants, or direct to service stations equipped with large underground storage tanks.



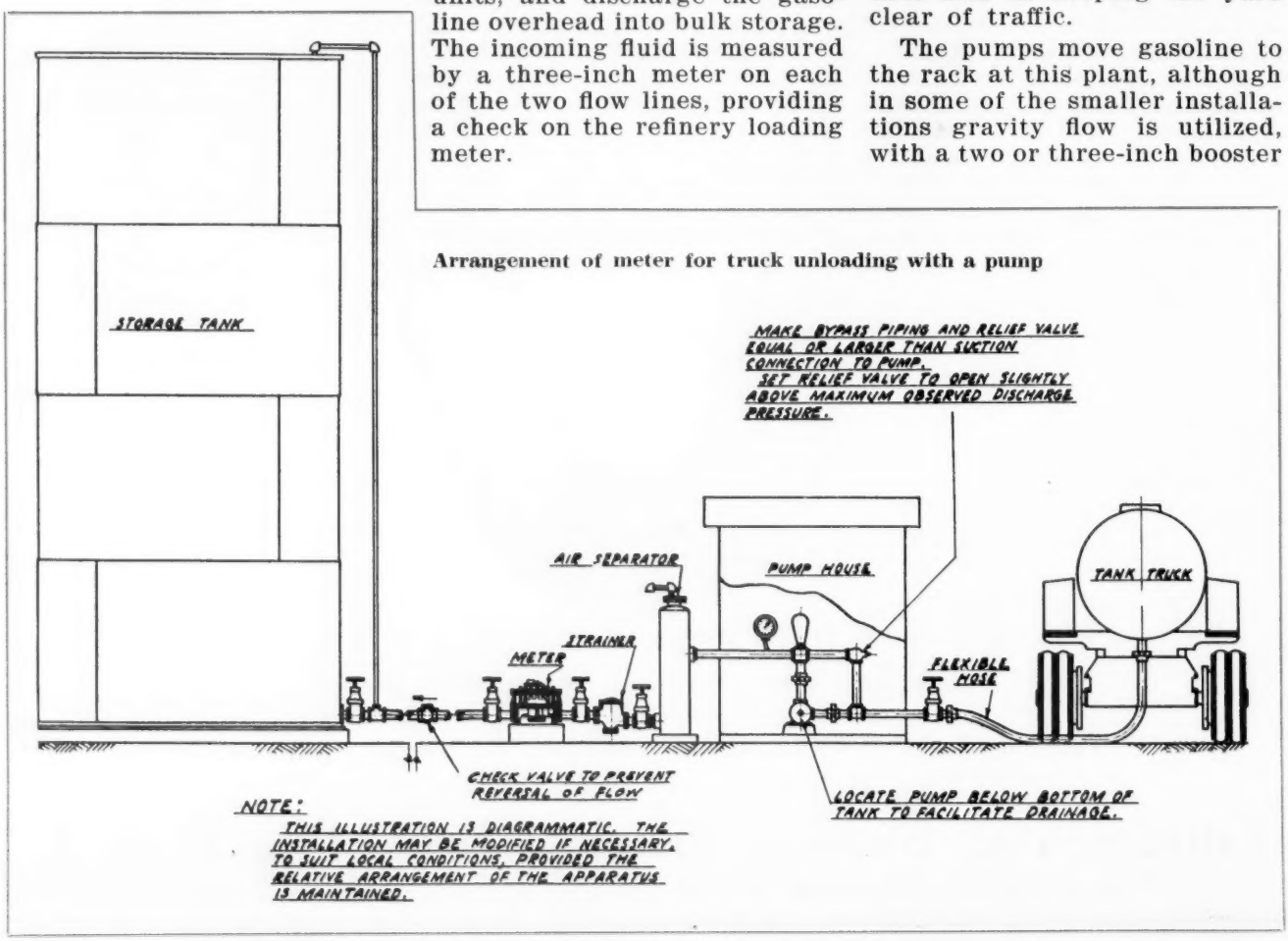
**Bottom view of mounting on Associated Oil Co. trucks, showing method of connecting tank and meter on a 1000 gallon four-compartment tank. Meters are out of picture, above the strainers**

For unloading at the Vernon plant, 100 to 125 gallon-per-minute pumps empty the mobile units, and discharge the gasoline overhead into bulk storage. The incoming fluid is measured by a three-inch meter on each of the two flow lines, providing a check on the refinery loading meter.

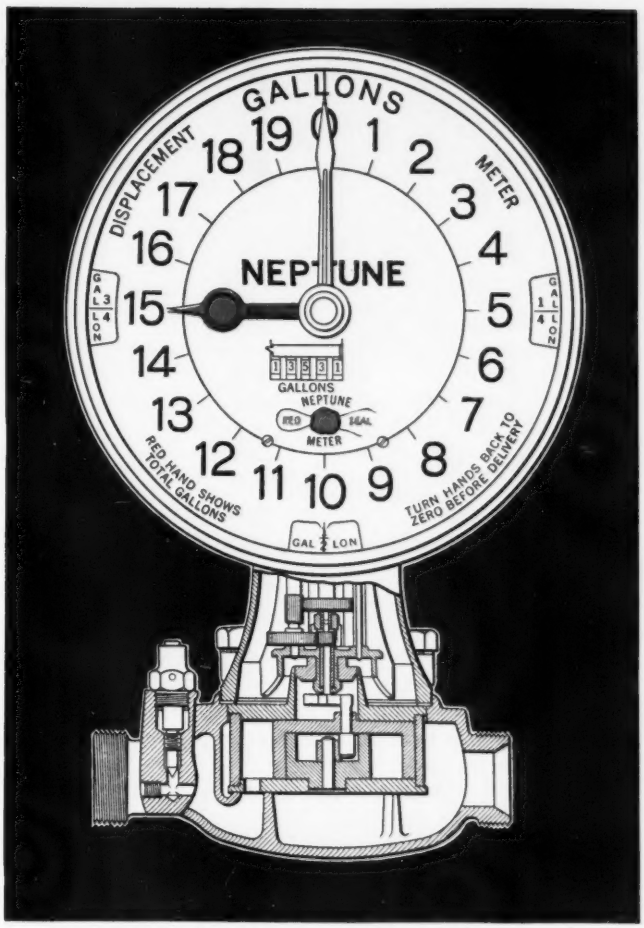
Three-inch underground lines from storage supply six 2-inch meters on the truck loading rack. This rack serves three tank trucks at a time, a feature that aids in keeping the yard clear of traffic.

The pumps move gasoline to the rack at this plant, although in some of the smaller installations gravity flow is utilized, with a two or three-inch booster

**Arrangement of meter for truck unloading with a pump**


STORAGE TANK
MAKE BYPASS PIPING AND RELIEF VALVE EQUAL OR LARGER THAN SUCTION CONNECTION TO PUMP. SET RELIEF VALVE TO OPEN SLIGHTLY ABOVE MAXIMUM OBSERVED DISCHARGE PRESSURE.
AIR SEPARATOR
PUMP HOUSE
TANK TRUCK
STRAINER
METER
FLEXIBLE HOSE
CHECK VALVE TO PREVENT REVERSAL OF FLOW
LOCATE PUMP BELOW BOTTOM OF TANK TO FACILITATE DRAINAGE.
NOTE:
THIS ILLUSTRATION IS DIAGRAMMATIC. THE INSTALLATION MAY BE MODIFIED IF NECESSARY, TO SUIT LOCAL CONDITIONS, PROVIDED THE RELATIVE ARRANGEMENT OF THE APPARATUS IS MAINTAINED.

# BANISH METER TINKERING FROM YOUR PAYROLL




*Neptune RED SEAL Meter, a positive displacement meter for gasoline dispensing pumps*

HERE'S a positive displacement, piston meter that will work for you for nothing. RED SEAL simplicity assures that. There is only one moving part in the measuring mechanism of a RED SEAL Meter. No crankshafts, valves, connecting rods or piston rings . . . nothing to get out of order. And RED SEALS are lastlingly accurate. Numerous tests by impartial agents prove them so.

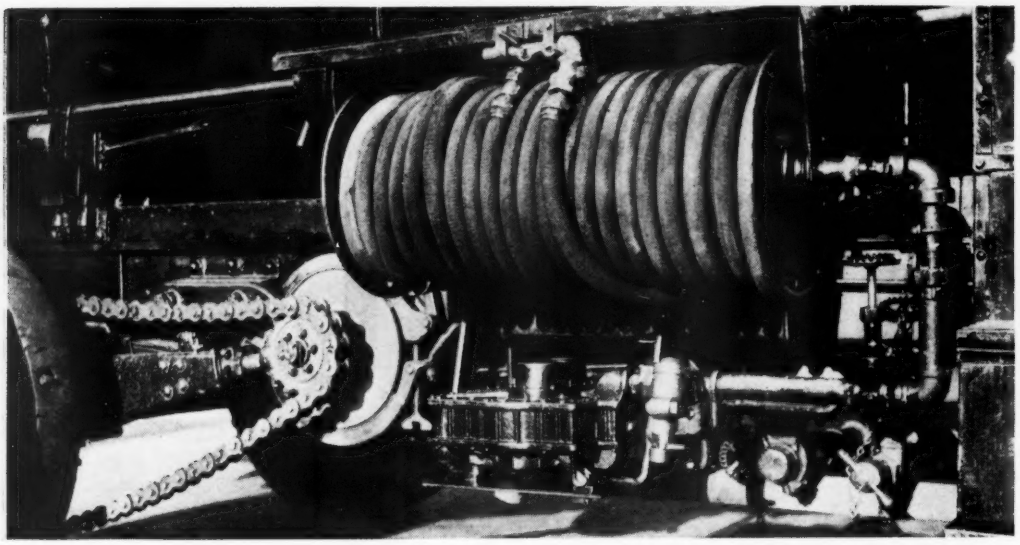
When you purchase meter pumps, insure against service calls, repair bills and lost sales by specifying Neptune RED SEAL Meters.

NEPTUNE METER COMPANY
Main Office: 50 East 42nd Street NEW YORK, N.Y.

*Branch Offices: Atlanta Boston Chicago Dallas Denver Kansas City Los Angeles Louisville Portland, Ore. San Francisco*

## NEPTUNE RED SEAL METER

*NEPTUNE DISC GASOLINE METERS · NEPTUNE BULK STATION METERS · NEPTUNE TANK WAGON METERS · NEPTUNE GREASE METERS*



Hose reel and meter installation on fuel oil truck of a California company

as a standby when the head is low.

On large racks, 3-inch meters permit a flow rate of about 350 gallons a minute. By connecting two or more meters of this size into a single flow line it is possible to increase the speed of delivery, although at an additional investment.

Meters are not generally used on loading racks where the flow rate may approximate 500 or 600 gallons per minute, delivery rates achieved by several recent installations.

In the Vernon warehouse, thirteen 1½-inch meters are on lubricating oil lines. Meters have proven satisfactory in this service because of the ease with which drums may be filled to the desired capacity without danger of spillage. In the station yard there is a 1-inch meter on the service pump for company trucks and cars.

Bulk plants, in areas where demand for engine distillate and kerosine or fuel oil makes up a large part of the daily business, are equipped to meter these commodities in a similar manner.

Closely associated with the use of meters at bulk plants is their use on the delivery tank trucks. To obtain accurate checking on movement of commodities through the plant, meters on the loading rack must be calibrated to the same accuracy as those on the trucks. This is usually done by filling the truck tank through the loading rack meter and drawing off the load through the truck meter which has been set to zero tolerance. The meters are adjusted until the two readings agree.

There are eight tank trucks, three with trailers, operating out of the Vernon plant supplying the Los Angeles area.

Meters on this automotive equipment are 1½-inch with flow rates averaging 20 to 30 gallons per minute with a full head of liquid. More recent installations of truck meters provide for 2-inch outlets and inlets, giving a flow of 40 and 50 gallons. Experiments have indicated it is possible to increase this rate to nearly 70 gallons a minute by efficient systems of piping between the tank outlet and meters and connections to the receiving tank.

An early improvement in flow equipment design was to enlarge the internal tank valve to three inches, and even in instances where this was not practical, the piping between tank outlet and meter was increasing in size.

Associated is using three-inch tubing for these connections. The tubing has a wall thickness of .083 inch as compared to a thickness of .217-inch on standard 3-inch pipe, and it has worked satisfactorily on a 2-inch meter with 3-inch openings.

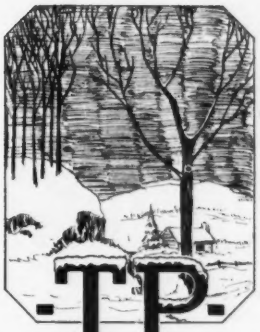
Another company, using 3-inch standard pipe, with the same meter, obtained flow rates of 50 to 73 gallons per minute, the amount depending largely upon the type of fill line connections to the receiving tank. In this regard, it was found that increased flow rates through meters could be obtained by adding an extension to the end of the flexible discharge hose. This extension is made to reach down below the inside top of the storage tank so that by taking advantage of the syphonic action thus set up it has been possible with other improvements to increase flow rates as much as 30 per cent.

One California company, using a five-compartment, 2000-gallon tank truck on a peddling run—the space being divided into three 500 gallon and two 250 gallon compartments — manifolds its piping so as to combine three compartments on one meter and two on another.

Cleanliness of products going through meters is an important factor of their service life and accuracy. Records have shown there is a neglible maintenance cost if the equipment is properly operated. No set of rules have been worked out to govern time or frequency of making repairs or testing inspections.

Where inaccuracies are reported a repair man is detailed to check the installation, otherwise a unit may operate without supervision for several months.

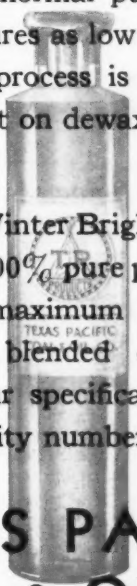
In one instance, with a plant




# WINTER BRIGHT STOCKS

Are unblended, with a heavy bodied paraffine base, have a maximum pour test of Zero and lower, and are pumpable at normal pump pressure at temperatures as low as 40° below Zero. This process is protected by a basic patent on dewaxing paraffine base crude.

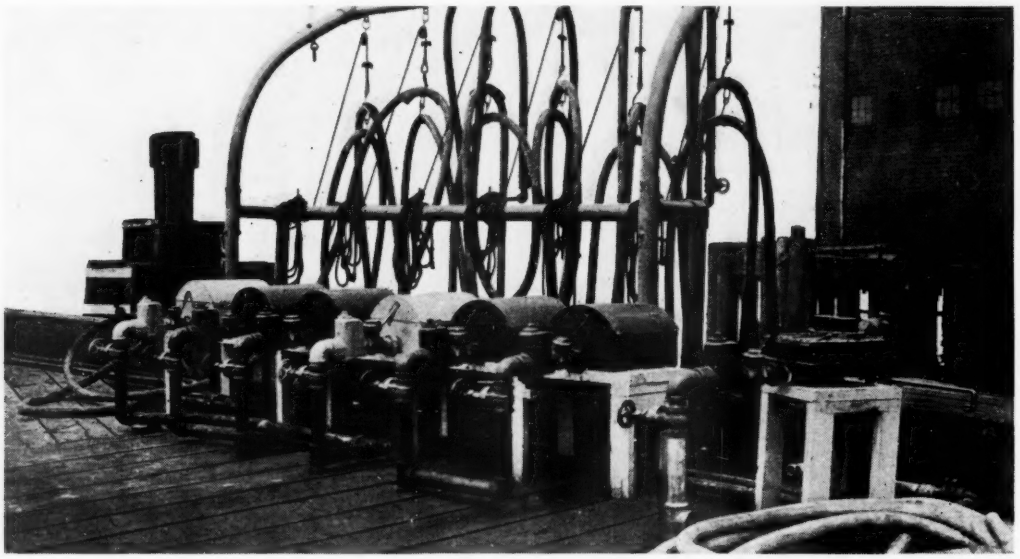
All -TP- Winter Bright Stocks are made from 100% pure paraffine base crude with maximum pour test of Zero. -TP- blended oils will be made to your specifications on any S.A.E. viscosity numbers.




## TEXAS PACIFIC COAL & OIL CO.

FORT WORTH, TEXAS

WRITE, WIRE OR PHONE FOR QUOTATIONS. A QUART, A BARREL — OR A TANKCAR



A bank of six 1½-inch meters on a wharf at Seattle, Wash., for measuring gasoline, kerosine, or engine distillate to small boats

completely meterized, the average cost of maintaining each meter was estimated at less than 25 cents a month.

In addition to the successful use of meters in marketing gasoline, kerosine, engine distillate, and lubricating and fuel oils from the bulk plant or service station, they have proven admirably suited in moving large quantities of gasoline, diesel or fuel oils, over wharves to boats and barges.

The old system of gauge tanks on the wharf was a constant source of argument, and marine men now accept meter measurement in preference to other systems.

## Chain Stations 25% Of Total, Did 33% Of Business

WASHINGTON

CHAIN gasoline stations comprised about one-fourth of the total stations in the country, and did about one-third of the business in 1929, so the report by the Bureau of Census on retail distribution shows.

A further break-down of chain station statistics shows that 14 large chains did about 49 per cent of the business done by all chains, and had more than half the number of chain stations. Each of the 14 chains had more than 500 stations.

For the purposes of the census a group of four or more stations owned by the same individual or by a single interest was classed as a chain. These chains were divided into local, as in one city; sectional, as in one section of the country; and national chains.

The Census Bureau, it will be recalled, included in its census of gasoline stations only places where the principal business was the sale of petroleum products. Places where the sale of gasoline and oil was regarded as a side line were not included.

Independent stations were classed as single or two or three station independents.

Out of about 120,000 gasoline stations in the country 30,050 were classed as chains. Total sales were $1,880,000,000 in 1929, and of this amount chain store sales were $629,024,296. Average annual sales for chain stations were $20,933 as against an average of $14,000 for independent stations.

Of the total sales at chain stations 85 per cent was from gasoline, 11.64 per cent from motor oil, 2.35 per cent from miscellaneous merchandise, and .99

### Geographic Division of Chain Stations

| Geographic Division | Number of stations | Total sales |
|---|---|---|
| New England | 1,893 | $41,604,047 |
| Middle Atlantic | 5,056 | 118,158,295 |
| East north central | 6,364 | 197,539,820 |
| West north central | 5,578 | 91,732,540 |
| South Atlantic | 2,049 | 59,681,847 |
| East south central | 1,161 | 21,121,343 |
| West south central | 3,066 | 54,536,516 |
| Mountain | 609 | 13,001,900 |
| Pacific | 1,093 | 31,647,988 |
| United States | 30,050 | 629,024,296 |

# PUT THE ENTIRE TIME *of* YOUR MEN TO WORK

**A Method**
**A Price Basis**
**A Guarantee**

*that have been proven successful in the sale of* TIRES *thru filling stations*

Although winter cuts into gas and oil sales, it leaves more time for attendants to sell other products.

We have made it easy for station men to sell tires. Pharis prices for FIRST LINE tires are equal to or lower than prices asked elsewhere for second line tires—prices that can compete with *any* source of supply. The guarantee not only protects the purchaser but protects you from red tape and customer-heckling; in fact, enhances good-will.

Ask for our plans, our proposition—reap the extra profits that may mean the difference between red and black ink on your books.

The Pharis Tire & Rubber Co. - Newark, O.

EXTRA WINTER PROFITS *with*

# PHARIS 1ST LINE TIRES

TYPICAL PRICES

| | |
|---|---|
| 4.40-21 | $ 4.98 |
| 4.75-19 | 6.65 |
| 5.00-19 | 6.98 |
| 5.25-18 | 7.90 |
| 6.00-18 | 11.20 |

•

**SPECIAL STEEL PLATE EQUIPMENT**
***for* PRESSURE *or***
**VACUUM PROCESSES**

•

**SPECIAL *and* STANDARD TANKS**

•

**STACKS BREECHING**
**STEEL PIPE**

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**GRAVER TANK & MFG. CORP.**
East Chicago, Indiana
*Fabricators of*
**GRAVER**
**SPECIAL PLATE CONSTRUCTION**
*also*
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per cent from service charges.

There were a total of 864 chains, having 30,050 stations and employing 64,950 persons. The total operating expense for these chain stations was 23.77 per cent of sales. Wages and salaries were $81,239,385, and other operating expense including rent was $68,258,916.

A further analysis of the figures indicates this division in the type of chains: 11 national chains did 20.9 per cent of the total chain station sales; 83 sectional chains did 49.3 per cent of the chain sales; and 770 local chains did 29.8 per cent of these sales.

In the average annual sales per chain station the smaller chains were higher with an average of $29,588 per station against $19,432 average for the larger chains.

The number and size of chains having fewer than 500 stations each follows:

One to five hundred units, 25 chains.

Fifty to 100 units, 18 chains.

Twenty-six to 50 units, 36 chains.

Eleven to 25 units, 132

Six to 10 units, 264 chains.

Four to six units, 375 chains.

## Oil Trademarks For Copyright

THE following trademarks are in line for early registration at the U. S. Patent Office.

For further information on trademark matters, address either the Editor of this Department, or this publication's trade-mark specialists, the National Trade-Mark Co., Barrister Bldg., Washington, D. C.

A free advance search as to registrability of any trademark or tradename a reader may contemplate adopting is offered by NATIONAL PETROLEUM NEWS.

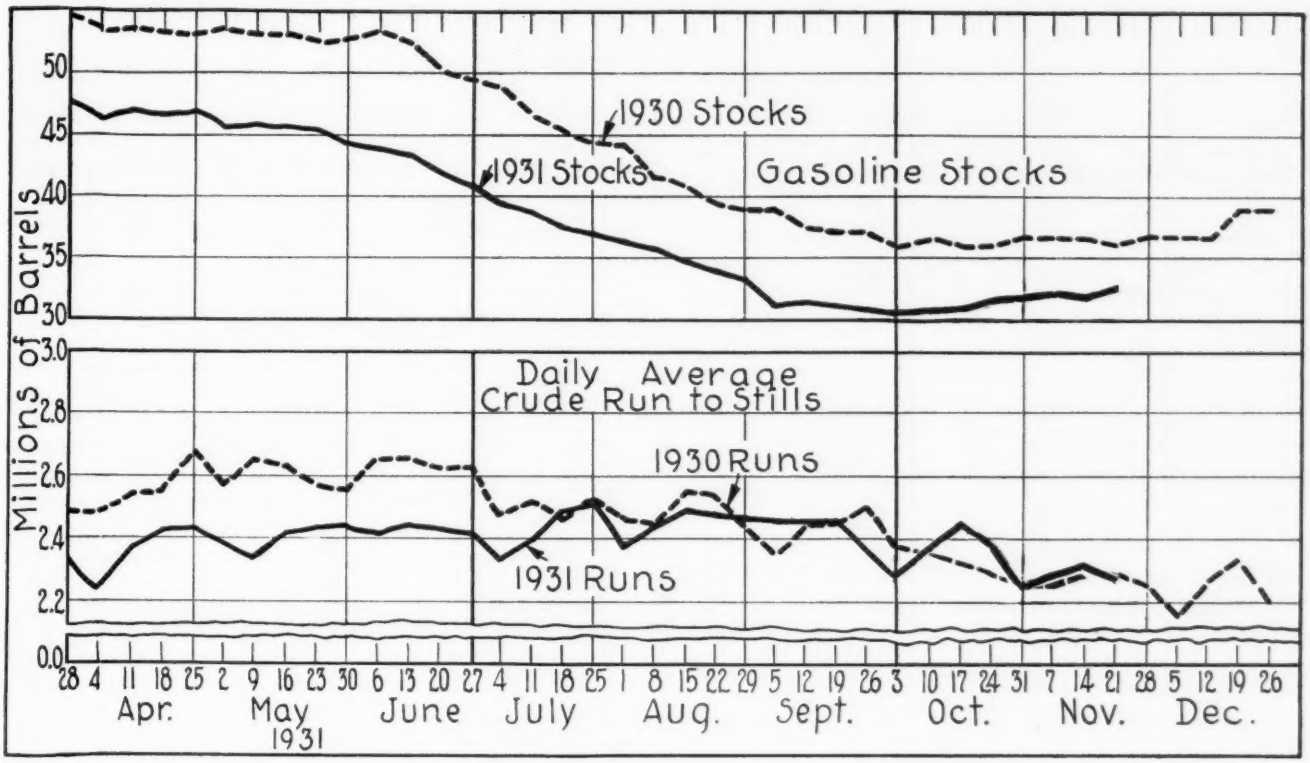
"APEX," and representation of a pyramid. Ser. No. 318,434. Apex Regulator Company, Marshalltown, Iowa. For oil or gas eliminating traps, oil separators, oil drain valves etc. etc.

"DOUBLE-PENN." Ser. No. 317,569. Penn-State Petroleum Company, Warren, Pa. For lubricating oils.

"THERMREX.". Ser. No. 317,762 General Petroleum Corporation of California, Los Angeles, California. For lubricating greases.

"PENN FAR-GO." Ser. No. 317,908. The Union Refining Company, Denver, Colo. For motor oils and greases for lubricating purposes.

## U. S. Crude Runs and Gasoline Stocks as Reported Weekly by A. P. I.




# U. S. Refinery Runs Reduced 81,400 Barrels

By Telegraph

NEW YORK, Nov. 24

LED by the East Coast district refiners reporting to to the American Petroleum Institute reduced their runs of crude to stills 81,400 barrels daily average to 2,261,600 barrels per day in the week ended Nov. 21. Reporting plants utilized 61.7 per cent of their still capacity as compared with 63.9 per cent the previous week.

California refiners reduced their crude runs 28,400 barrels daily average, Oklahoma-Kansas 12,700 barrels and Indiana-Illinois refiners 9700 barrels daily average. Texas refiners increased their crude runs 22,300 barrels daily average.

Gasoline stocks at refineries increased 620,000 barrels during the week to 32,511,000 barrels. Stocks at bulk terminals and in water-borne transits to these terminals east of California were reduced 608,000 barrels during the week to 12,917,000 barrels. Net gasoline stocks outside the retail distributing system thus increased only 12,000 barrels.

The largest increase in gasoline stocks was reported by Texas refiners totaling 854,000 barrels, largely in the Gulf Coast region. California refiners drew 336,000 barrels from storage.

Fuel oil stocks increased 137,000 barrels to 136,264,000 barrels during the week.

## Current Refinery Operations

| Districts | Per Cent Capacity Reporting | Daily Average Crude to Stills (Barrels) Week Ended | | Per Cent of Reporting Capacity Operated Week Ended | | Stocks (Thousands of Barrels) Gasoline | | Gas & Fuel Oil | | % of Total Capacity Reporting | Cracked Gasoline Production Daily Av. Production (Barrels) Week Ended | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Nov. 21 | Nov. 14 | Nov. 21 | Nov. 14 | Nov. 21 | Nov. 14 | Nov. 21 | Nov. 14 | Nov. 21 | Nov. 21 | Nov. 14 |
| East Coast | 100.0 | 404,900 | 467,000 | 63.9 | 73.7 | 4,127 | 4,066 | 10,209 | 10,234 | 94.0 | 93,600 | 100,000 |
| Appalachian | 91.8 | 99,900 | 92,000 | 72.7 | 67.0 | 1,201 | 1,252 | 1,634 | 1,635 | 96.1 | 23,900 | 24,200 |
| Ind., Ill., Ky. | 98.9 | 311,600 | 321,300 | 72.2 | 74.5 | 3,232 | 3,205 | 5,776 | 5,664 | 95.5 | 81,600 | 82,700 |
| Okla., Kans., Mo. | 89.6 | 244,700 | 257,400 | 56.2 | 59.1 | 2,665 | 2,734 | 4,892 | 4,876 | 92.3 | 48,300 | 48,400 |
| Texas | 91.3 | 567,000 | 544,700 | 74.1 | 71.2 | 6,504 | 5,650 | 11,838 | 11,713 | 96.8 | 129,600 | 136,700 |
| La., Ark. | 98.9 | 159,700 | 163,400 | 69.3 | 70.9 | 952 | 850 | 4,053 | 3,924 | 100.0 | 36,700 | 41,400 |
| Rocky Mountain | 89.4 | 46,000 | 41,000 | 32.0 | 28.5 | 1,295 | 1,263 | 810 | 810 | 98.5 | 16,400 | 15,900 |
| California | 97.1 | 427,800 | 456,200 | 48.2 | 51.4 | 12,535 | 12,871 | 97,052 | 97,271 | 100.0 | 45,800 | 47,000 |
| Total | 95.2 | 2,261,600 | 2,343,000 | 61.7 | 63.9 | 32,511 | 31,891 | 136,264 | 136,127 | 95.6 | 475,900 | 496,300 |
| Texas (Gulf Coast) | 99.8 | 425,300 | 416,100 | 80.0 | 78.3 | 4,964 | 4,170 | 8,504 | 8,425 | 98.6 | 102,700 | 109,600 |
| La. (Gulf Coast) | 100.0 | 106,700 | 112,600 | 72.3 | 76.3 | 827 | 746 | 3,264 | 3,089 | 100.0 | 26,900 | 31,300 |

# Compilation Of Mid-Continent Refinery Operations

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## Mid-Continent Refinery Operations, Week Ended November 20 (By Telegraph)

| | Kansas | Oklahoma | North & Cent. Texas | West Texas | North La.-Ark. | Total Week Ended Nov. 20 |
|---|---|---|---|---|---|---|
| Plants Reporting.... | 10 | 23 | 23 | 10 | 10 | 76 |
| Da. Av. Cap. (Bbls.).. | 94,000 | 162,500 | 107,400 | 71,500 | 60,700 | 496,100 |
| Da. Cracking Capacity | 53,200 | 64,600 | 23,100 | 26,250 | 31,700 | 198,850 |
| Da. Av. Crude Runs.. | 53,559 — 18.3 | 95,989 + 2.1 | 69,260 + 11.1 | 28,491 + 9.7 | 44,535 + 6.0 | 291,834 + 0.7 |
| Da. Av. Other Oil.... | 6,391 — 2.9 | 3,994 + 68.0 | 3,775 — 1.8 | ..... .... | 17,049 — 0.9 | 31,209 + 4.0 |
| **GASOLINE—Gallons** | | | | | | |
| Stocks, Nov. 13..... | 26,077,000 | 32,870,000 | 30,814,000 | 13,553,000 | 4,114,000 | 107,428,000 |
| Prod. 11-13 to 11-20.. | 10,510,000 — 13.8 | 16,220,000 — 2.6 | 11,034,000 + 7.6 | 2,782,000 — 4.4 | 6,925,000 + 5.7 | 47,471,000 — 2.3 |
| Ship. 11-13 to 11-20... | 13,488,000 + 57.0 | 16,328,000 + 2.9 | 10,433,000 + 10.2 | 1,922,000 — 14.0 | 6,394,000 + 1.8 | 48,565,000 +14.4 |
| Stocks, Nov. 20..... | 23,099,000 — 11.4 | 32,762,000 — 0.3 | 31,415,000 + 2.0 | 14,413,000 + 6.3 | 4,645,000 + 12.9 | 106,334,000 — 1.0 |
| Ratio Sales to Prod... | 128 3% | 100.7% | 94.5% | 69.1% | 92.3% | 102.3% |
| **KEROSINE—Gallons** | | | | | | |
| Stocks, Nov. 13..... | 12,609,000 | 13,616,000 | 2,514,000 | 38,000 | 399,000 | 29,176,000 |
| Prod. 11-13 to 11-20.. | 1,472,000 — 13.7 | 2,036,000 + 0.09 | 1,060,000 — 18.6 | ..... .... | 416,000 + 40.5 | 4,984,000 — 7.0 |
| Ship. 11-13 to 11-20... | 3,073,000 +160.2 | 2,387,000 — 1.0 | 1,200,000 + 11.5 | 8,000 — 55.6 | 418,000 + 41.7 | 7,086,000 + 42.3 |
| Stocks, Nov. 20..... | 11,008,000 — 12.1 | 13,265,000 — 2.6 | 2,374,000 — 5.6 | 30,000 — 21.1 | 397,000 — 0.5 | 27,074,000 — 7.2 |
| Ratio Sales to Prod... | 208.8% | 117.2% | 113.2% | ..... .... | 100.5% | 142.2% |
| **STOVE DISTILLATE—Gallons** | | | | | | |
| Stocks, Nov. 13..... | 2,149,000 | 12,311,000 | 376,000 | 80,000 | 40,000 | 14,956,000 |
| Prod. 11-13 to 11-20.. | 332,000 — 8.3 | 636,000 + 0.1 | 178,000 — 3.3 | 28,000 — 48.1 | 21,000 — 50.0 | 1,195,000 — 6.4 |
| Ship. 11-13 to 11-20... | 483,000 + 0.4 | 108,000 — 85.0 | 171,000 — 21.2 | 29,000 — 35.6 | 25,000 — 39.0 | 816,000 — 45.8 |
| Stocks, Nov. 20..... | 1,998,000 — 7.0 | 12,839,000 + 4.3 | 383,000 + 1.9 | 79,000 — 1.2 | 36,000 — 10.0 | 15,335,000 + 2.5 |
| Ratio Sales to Prod... | 145.5% | 17.0% | 96.1% | 103.6% | 119.0% | 68.3% |
| **GAS OIL—Gallons** | | | | | | |
| Stocks, Nov. 13..... | 11,878,000 | 39,262,000 | 7,660,000 | 1,807,000 | 6,781,000 | 67,388,000 |
| Prod. 11-13 to 11-20.. | 848,000 + 40.9 | —492,000 .... | 732,000 + 7.8 | 585,000 — 10.3 | 2,518,000 — 5.1 | 4,191,000 — 31.8 |
| Ship. 11-13 to 11-20.. | 1,554,000 + 92.6 | 1,169,000 — 36.1 | 741,000 — 17.1 | 480,000 — 9.4 | 2,765,000 — 10.1 | 6,709,000 — 6.0 |
| Stocks, Nov. 20..... | 11,172,000 — 5.9 | 37,601,000 — 4.2 | 7,651,000 — 0.1 | 1,912,000 + 5.8 | 6,534,000 — 3.6 | 64,870,000 — 3.7 |
| Ratio Sales to Prod... | 183.3% | ..... .... | 101.2% | 82.1% | 109.8% | 106.1% |
| **FUEL OIL—Gallons** | | | | | | |
| Stocks, Nov. 13..... | 16,421,000 | 72,484,000 | 89,496,000 | 21,674,000 | 19,758,000 | 219,833,000 |
| Prod. 11-13 to 11-20.. | 4,581,000 — 16.6 | 5,451,000 — 15.4 | 6,471,000 + 11.1 | 2,988,000 + 16.4 | 4,824,000 + 3.8 | 24,315,000 — 2.3 |
| Ship. 11-13 to 11-20.. | 5,573,000 + 7.1 | 5,532,000 + 12.8 | 4,785,000 + 4.9 | 2,847,000 — 4.9 | 4,280,000 — 7.8 | 23,017,000 + 3.2 |
| Stocks, Nov. 20..... | 15,429,000 — 6.1 | 72,403,000 — 0.1 | 91,182,000 + 1.9 | 21,815,000 + 0.7 | 20,302,000 + 2.7 | 221,131,000 + 0.6 |
| Ratio Sales to Prod... | 121.7% | 101.5% | 73.9% | 95.3% | 88.7% | 94.7% |

## Gasoline Produced by Various Methods, Week Ended November 20

| | Kansas | % of Total | Oklahoma | % of Total | North & Cent. Texas | % of Total | West Texas | % of Total | Louisiana-Arkansas | % of Total | Total | % of Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Straight Run..... | 5,506,000 | 52.4 | 10,112,000 | 62.3 | 6,839,000 | 62.0 | 2,155,000 | 77.5 | 3,129,000 | 45.2 | 27,741,000 | 58.4 |
| Cracked..... | 3,744,000 | 35.6 | 4,680,000 | 28.9 | 3,292,000 | 29.8 | 445,000 | 16.0 | 3,144,000 | 45.4 | 15,305,000 | 33.2 |
| Natural..... | 1,260,000 | 12.0 | 1,428,000 | 8.8 | 903,000 | 8.2 | 182,000 | 6.5 | 652,000 | 9.4 | 4,425,000 | 9.4 |
| Total..... | 10,510,000 | | 16,220,000 | | 11,034,000 | | 2,782,000 | | 6,925,000 | | 47,471,000 | |

+ or — columns are % change over previous week.

## Gasoline Stocks Lowered Despite Rise in Crude Runs

Staff Special—By Telegraph

TULSA, Nov. 24

DECREASES in runs of crude oil at Kansas refineries almost offset increases in runs in other districts of the Mid-Continent the week ended Nov. 20. The increase for the entire Mid-Continent amounted to only 2000 barrels daily average.

All but the North Texas and Louisiana-Arkansas districts curtailed gasoline output. Total output was 1,100,000 gallons less than in the preceding week. Shipments were 6,100,000 gallons more than in the week before. Demand was less in only the West Texas district. Draft on stocks in Oklahoma and Kansas resulted in a lowering of gasoline inventory in the Mid-Continent of 1,100,000 gallons.

Kerosine shipments increased 2,100,000 gallons resulting in a draft of that volume on stocks. Distillate stocks increased slightly. A fall of almost a third in gas oil output resulted in a decline of stocks. Fuel oil stocks rose 2,000,000 gallons.

## Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Nov. 20. Change in stocks figured from Oct. 23.

**GASOLINE**

| | Gallons |
|---|---|
| Production | 181,351,000 |
| Shipments | 181,759,000 |
| Net change in stocks | —408,000 |
| Ratio sales to production.... | 100.2% |

**KEROSINE**

| | Gallons |
|---|---|
| Production | 19,706,000 |
| Shipments | 21,451,000 |
| Net change in stocks | —1,745,000 |
| Ratio sales to production.... | 108.9% |

**STOVE DISTILLATE**

| | Gallons |
|---|---|
| Production | 4,336,000 |
| Shipments | 4,734,000 |
| Net change in stocks | —398,000 |
| Ratio sales to production.... | 109.2% |

**GAS OIL**

| | Gallons |
|---|---|
| Production | 20,304,000 |
| Shipments | 27,274,000 |
| Net change in stocks | —6,970,000 |
| Ratio sales to production.... | 134.3% |

**FUEL OIL**

| | Gallons |
|---|---|
| Production | 91,719,000 |
| Shipments | 90,697,000 |
| Net change in stocks | +1,022,000 |
| Ratio sales to production.... | 98.9% |

## Discounts to "Auto Clubs" Code Violation

LOUISVILLE—Contracts between oil marketing companies and the so-called "automobile clubs," which call upon the oil company to sell gasoline to members of the clubs at less than the price to the general public, are called violations of the code of marketing practices by the Kentucky Code Committee.

The committee called attention to the fact that this practice violates either or both of Rules 16 and 17 in the code. Rule 16 forbids giving away of "oil or other things of Value." Rule 17 calls for posting of prices for all classes of deliveries.

The committee pointed out that the display of emblems and signs of such clubs at stations was prime facia evidence of code violation on the part of the marketer.

The "automobile clubs" operate in Kentucky, as in other states, selling memberships to motorists for varying amounts, generally $10 or $12 a year, promising in return savings to their members in the cost of their gasoline and oil. Then the club makes a deal with some company operating stations to give discounts to club members, in return for the business.

The Kentucky code committee also asked oil companies signing the code to see that their sales representatives carry out the rule which prohibits the giving away of merchandise at stations with sales of gasoline and oil.

## Appeal Argued in Davis Tank Monopoly Fight

NEW YORK, Nov. 23.—The effort of the Davis Welding & Mfg. Co. of Cincinnati to enjoin the fire commissioner of New York from specifying a patented truck tank for the delivery of gasoline in New York, was argued Nov. 20 in the appellate division of the Supreme Court of New York.

The suit was brought in the name of Serena A. Davis, a taxpayer. An injunction against the fire commissioner had been denied in a lower court.

This action is another step in the effort of the Davis company to break the New York truck tank monopoly.

---

### Erects Large Storage Tanks

TULSA, Nov. 21.—The East Texas Refining Co. has completed the erection of an 80,000-barrel spheroid tank for gasoline storage at its Longview plant, according to an announcement by Freeman W. Burford, president. A second tank is now under construction.

PARTICULARLY true of Freedom *Low Cold Test Oils* are such endorsements as "If there is a refinery that produces better oil than Freedom, we have been unable to find it" and "When it comes to quality, Freedom is right on top." These opinions express the satisfaction of the 700 and more jobbers who market Freedom 100% Pennsylvania Motor Oils under their own brand name or one of our brands and make the handsome margin of profit that goes with it.

Freedom *Low Cold Test Oils* fully meet the severe demands of winter driving. Made of the finest 100% Pennsylvania Crudes, refined and dewaxed by special Freedom processes which include pressing at temperatures below zero, they possess all of the extra lubricating characteristics for which Freedom has become famous and in addition provide appreciable easier starting in coldest weather.

We would like to supply you with Freedom *Low Cold Test Oils*, also other motor oils made (Sharples Process) to your specifications or tested specifications of this 52-year-old organization. Quick shipments in tank cars, compartment tank cars or carloads of barrels or drums. Your request for full information and quotations will receive immediate attention.

THE FREEDOM OIL WORKS CO.
FREEDOM, PA.

Refineries at FREEDOM and CORAOPOLIS, PA.

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*150 Viscosity Sharples Bright Stock*
*85/90 Viscosity Sharples Bright Stock*
*100% Pennsylvania Neutrals*
*600 Steam Refined*
*650 Steam Refined*
*600 Flash Steam Refined*
*630 Flash Steam Refined*
*Freedom Filtered Kerosene Oil*

Accepted 100% PURE PENNSYLVANIA OIL
Permit No. 31

FREEDOM

100% PENNSYLVANIA OILS

FO-507

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the most modern refinery equipment
an able technical staff
experienced craftsmen
to produce oils like these:

## PENNSYLVANIA WINTER OILS

**Free Flowing at Lowest Winter Temperatures**

| Viscosities | Pour Tests |
|---|---|
| 50/55 @ 210 | Below 0° F. |
| 60/65 @ 210 | Below 0° F. |
| 75/80 @ 210 | Below 0° F. |
| 85/90 @ 210 | Below 0° F. |

Also higher viscosities, if desired

**The established good-will of Pennsylvania Motor Oil need not be a "frozen asset" this winter!**

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at Franklin, Pennsylvania

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# Refinery - Tank Wagon Markets

## Gasoline Prices Higher in Some Areas; Mid-Continent Prices Down

CLEVELAND, Nov. 23

CONFLICTING price trends were noted in the country's oil markets in the week ended Nov. 21. Tank car prices for gasoline made fair gains in some areas and suffered substantial losses in others. Burning oils generally were steady in all markets. Lubricating oil prices receded in most markets.

Outstanding developments affecting the general price situation either favorably or adversely were lacking. Crude oil prices were unchanged over the previous week. Refinery operations for the country as a whole were steady, sharp rises in operations in some areas offsetting substantial reductions in others.

Eastern seaboard tank car markets for gasoline improved considerably following increases in retail prices by Standard of New Jersey and Atlantic Refining Co. In the New York, Philadelphia and Baltimore markets some sellers advanced their tank car prices 0.25 cent and others reported more active jobber buying at the higher prices established the previous week.

The volume of distress gasoline available in the Pennsylvania market diminished considerably and prices tended higher.

Reaction set in in the Mid-Continent and Chicago markets and gasoline prices receded 0.25 to 0.375 cent a gallon. Jobbing demand was light and refiners reduced their quotations to stimulate movement of increased production.

Weather conditions in practically all areas east of the Rocky Mountains remained mild and this held down the demand for heating oils. There also was little movement in the call for industrial fuels. Prices, however, remained fairly steady in all markets.

The mild weather also hampered movement of low cold test lubricating oils, which predominate in refinery production schedules at this time, and prices were reduced materially to stimulate buying.

Prices were higher in the cargo market at the Gulf. Prices for both export and domestic shipments advanced 0.125 to 0.375 cent a gallon. Two cargoes of gasoline sold for coastwise movement but no export buying was reported.

## Gasoline Prices Down 0.25 Cent at Chicago

Staff Special

CHICAGO, Nov. 21

SPOT gasoline buying by jobbers was light in the Chicago market during the week ended Nov. 21 and most grades of gasoline were offered for prompt shipment at prices 0.25 cent lower than those prevailing the previous week.

The recession in spot prices was the first that has taken place in the general market, since the start of the last upward movement early in October, which culminated in advances in retail gasoline and crude oil markets.

Since the tank wagon advance, spot gasoline buying has been rather light and contract movement was not heavy enough to keep some distress material from appearing. The light spot jobber buying has, until last week, been largely offset by some of the larger refiners buying gasoline from carlot marketers and from other refiners.

Spot tank car prices for U. S. Motor, below 57 octane number, held steadily at a minimum of 4.5 cents f.o.b. Group 3 until Nov. 16. On that date quite a bit of distress Motor was moved at 4.375 cents. However, enough buying was done by jobbers and refiners to relieve this situation and the price was back on a 4.5-cent basis until Nov. 20 and 21. Buying again was light the latter half of the week and U. S. Motor was offered at 4.25 cents by several traders Nov. 21. Others continued to ask up to 4.5 cents for Motor with an octane number under 57.

Dissenting opinions were expressed by traders regarding the possible action of the market next week. Several said that there wasn't much distress gasoline being offered either by Chicago marketers or by refiners in the southwest and that practically all of the eastern refiners had moved their prices up enough to keep them from being much of a factor in the middle western market. Others said that unless refiners made a considerable cut in their operations there would be too much gasoline offered to be taken up either by jobbers or by the larger refiners who have been in the market.

**Summary of Group 3 Quotations for U. S. Motor Gasoline In Effect Nov. 23, 1931**

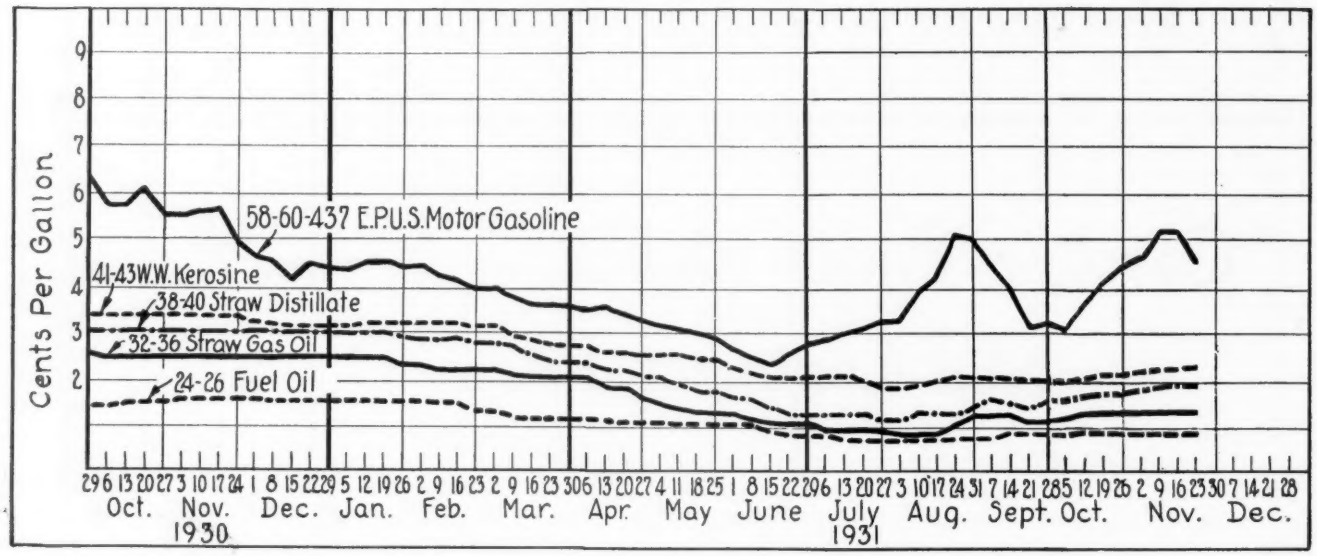
| | Below 57 Octane No. | 57-65 Octane No. | Above 65 Octane No. |
|---|---|---|---|
| Okla. | 4.75-5.00 | 4.50-5.00 | 4.75-5.25 |
| Kans. | 4.375-4.625 | 4.625-4.875 | 4.875-5.125 |
| N. Tex. | 4.25-4.50 | 4.50-4.75 | 4.75-5.00 |
| W. Tex. | 4.25-4.50 | 4.50-4.75 | 4.75-5.00 |
| La.-Ark. | 4.50 | 4.75 | 5.00 |
| Ind.-Ill. | 4.25-4.50 | ..... | ..... |

Prices are those quoted on the basis of f.o.b. Group 3 by refiners in the districts designated.

Kerosines experienced a flurry of added strength during the week, but prices were off slightly toward the end. Quotations for 41-43 w.w. generally were 2.125 to 2.25 cents Nov. 16, 2.25 cents flat during the middle of the week, and back to 2.125 to 2.25 cents by Nov. 21. Demand was reported fair by most traders.

Fuel and furnace oils generally continued to mark time. Industrial buying remained unchanged and lack of cold weather continued to hold down

## Current Prices of Principal Mid-Continent Refined Products




*Prices shown are in Group 3 basis and extended to date shown in Refinery Market Table Section of this issue*

demand for furnace oils. However, good grades of material continued scarce enough to keep prices at about the same levels as previously.

### Late Market Changes

NEW YORK—Nov. 24 Standard Oil Co. of New York advanced tank wagon and service station prices of gasoline 1 cent at Syracuse, to new prices of 13.8 cents and 14.8 cents respectively, including 2 cent state tax.

On the same date it cut kerosine prices 1 cent at Albany to 9.5 cents tankwagon; 1.5 cents at Manchester, Boston and Providence, to 8.5 cents; and 1.5 cents at Augusta, to 9 cents.

### Program Plans for Nebraska Jobbers

LINCOLN, Neb.—A program of instruction and education, according to the Weekly Nioma Service Bulletin, has been arranged for oil men attending the eleventh annual convention of the Nebraska Petroleum Marketers, Inc., at the Paxton Hotel, Dec. 9, 10 and 11.

The Omaha Oil Men's Club is arranging special entertainment for the ladies. The evening of Dec. 10 will be devoted to the banquet, entertainment and dance.

# Higher "Gas" Prices, Better Feeling In Detroit Oil Markets

DETROIT, Nov. 20

RETAIL oil markets in Detroit are brighter, and marketers here find signs of real improvement. That Detroit markets are better is indicative for our industry. This city probably has been hit hardest by general business conditions, and this has been reflected in the oil business here.

Retail prices are higher than prevailed in the summer and, although there still are many vacant lot "squatters" peddling motor oil, marketers are becoming less concerned over this competition.

Detroit has experienced a sub-normal retail price structure this year, with the exception of a few weeks in the winter. By late summer gasoline was sold at service stations 12 gallons for $1, including the state 3-cent tax.

Service station prices have advanced to a low of 8 gallons for $1, tax included. This price prevails at tank car, price selling drive-in stations, and for major company third grade gasoline.

The vacant lot "squatter," peddling motor oil at 12½ or 15 cents a quart, is a business enterprise of the current business situation. With the slump in automotive production, the demand for low priced merchandise increased, and there were plenty of unemployed eager to become motor oil peddlers.

A recent check, consisting of a few hours driving about the city, showed a count of over 150 vacant lot squatters. This was by no means a comprehensive check, and there undoubtedly are many times that number in business.

For a small investment a man could establish an oil sales place on a vacant lot. The city did not molest them with licenses, for as long as the squatters made a little money it meant that many fewer persons seeking relief.

Oil companies are becoming less disturbed about these vacant lot squatters. In the first place, it is recognized that, as soon as regular channels of employment open, many of these squatters will forsake their oil drums and go back to clerking, or whatever their regular occupation is.

Nature also may have a hand. A vacant lot is an acceptable place to camp out, as long as the sun shines and the weather is warm, but vacant lots have their disadvantages when winter sets in. Also, what might pass as summer lubricating oil, might not be so satisfactory in cold weather.

Oil companies, however, have not

## *Prices A Year Ago*

***Nov. 24, 1930***

| | Oklahoma | Penna. |
|---|---|---|
| 58-60 U. S. Motor Gasoline | 4.625-5.25 | 6.50-6.75 |
| Grade A Natural Gasoline | 4.625-4.75 | ..... |
| Kerosine (Okla. 41-43; Pa. 47 w. w.) | 3.125-3.375 | 5.25-5.75 |
| Fuel Oil (Okla. 24-26; Pa. 36-40) | $0.65-$0.70 | 3.375-3.75 |
| Crude (Okla. 35-35.9) | $0.92 | $1.85 |
| Chicago tank wagon (including 3c tax) | | 16.00c |

been idle in facing this low priced oil competition. Many dealers have a third line oil, selling at a low price. One large company put on a sale, over several weeks, of one of its brands of motor oil at $2.50 for five gallons. Another large company now is offering five-gallons of oil at $2.25. This is not the company's established oil brand.

Oil marketers, finding the outlook brighter, do not overlook that there still is much unemployment in Dretoit. The seasonal improvement in automobile production after Labor Day did not materialize this year. Also, the expected demand for labor in getting new models built for dealer's stock is still lacking, with only three auto manufacturers, one of these in the low priced field, stirred to greater activity.

Foreign gasoline, from Roumania, also has made its appearance in Detroit through stations of one of the biggest price cutters. This gasoline is being sold at the price of major company third grade brands. It is advertised as an anti-knock fuel, as is the gasoline from some of the tank car stations, and also the fact it is an imported gasoline is played up.

Weather conditions have been favorable to gasoline consumption so far this autumn. Mild days have brought in many gasoline customers, sales even respond to bright afternoons following dull, overcast mornings.

Marketers are not given to making long range predictions on the Detroit situation, but current conditions are believed to be brighter than for months past.

## Methods of Determining Sulfur Studied

WASHINGTON, Nov. 23.—Technical Paper 513 of the U. S. Bureau of Mines by Ralph H. Espach and O. C. Blade suggests a sensitive indicator as a modification of the Edgar and Calingaert method for determining the sulfur content of gasoline.

With the new indicator and provision against undue evaporation losses and improper lamp operation the Edgar and Calingaert method is a very satisfactory method of obtaining check results and, in the case of some sulfur compounds, of accurately determining the percentage of sulfur, Espach and Blade report. The method permits determinations whose average deviations from the mean are less than the deviations that occur in using the usual lamp method.

Technical Paper 513, "Studies on Determination of Sulfur in Gasoline" may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 5 cents per copy.

# Mid-Continent Refinery Markets

## Burning Oils Steady; Gasoline Prices React

Staff Special
TULSA, Nov. 21

THE Mid-Continent refinery market was featureless the week of Nov. 16 to 21, with the burning and heating oils showing the only semblance of steadiness.

Gasoline demand was exceptionally light, both on contracts and in the open market. This was attributed in part to the fact that contract prices were higher for the week than they had been the previous week and jobbers knowing the prices probably would be at higher levels, bought ahead for that reason.

Another factor was the advent of unfavorable weather in some sections of the middle west although conditions remained favorable in the refining districts proper.

Some inter-refinery buying was reported in the course of the week but was not sufficiently heavy to offset the decline in jobber demand generally. The result was a drop of approximately 0.25 cent in all grades of gasoline late in the week.

The slower demand was not only felt in Oklahoma but also in Kansas and Texas. The Louisiana and Arkansas refiners reported a comparatively good demand for gasolines.

Natural gasolines lost considerable ground. Demand was extremely light most manufacturers reported and takings on contracts were not as large as had been anticipated. No large orders were reported although the Standard Oil Co. of Indiana continued to be in the market occasionally for small lots.

Export and coastwise demand for natural gasolines also was reported lighter than had been the case in previous weeks.

The cooler weather caused the appearance of more of the lower grades but not in sufficient quantity to have an immediate effect on prices.

Kerosine prices moved up slightly in Oklahoma early in the week. Demand from domestic buyers was improved and export inquiries for small quantities were received in this territory. The inquiries came to Oklahoma refiners due to the fact that very little material was being made in the Texas district, and the Louisiana and Arkansas refiners were making only enough to take care of their differential territory business.

Distillate prices were unchanged throughout the week but refiners expected a slight increase in demand as a result of colder weather reported in part of the middle west late in the week. The advance in kerosine prices gave distillates more leeway in the event demand should stimulate prices.

Zero gas oils were still scarce in most districts but only in Louisiana and Arkansas were prices advanced. Ordinary grades were in fair demand in most quarters.

Fuel oils were comparatively active several refiners reported but prices generally remained unchanged in all districts. High gravity low cold test grades were the most active.

No chanage were noted in the neutral oils and bright stocks with the exception of 600 steam refined, which was slightly lower in price. Demand was fairly good a few refiners reported while others said demand was slow.

Wax prices were generally unchanged although a few makers indicated new business would be done at slightly higher prices.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## Chicago Tank Car Market

CHICAGO, Nov. 21

SPOT gasoline prices lost some ground in the Chicago market last week. Offerings Nov. 20 and 21 generally were at 0.25 cent under those made earlier in the week. Quotations for U. S. Motor, below 57 octane number, were mostly at 4.25 to 4.5 cents on Nov. 21. Open market gasoline buying was reported light in practically all quarters.

Kerosines were quiet as the week ended. Distillates, gas and fuel oils generally were marking time. Industrial buying remained light and a lack of cold weather held down demand for furnace oils. However, good grades of material were still not plentiful and prices remained about unchanged.

**Following prices represent majority of sales to jobbers on Group 3 freight basis, although shipments may originate in other refining districts such as North, West and East Texas, Louisiana, Arkansas, Indiana, Illinois, Kentucky, etc.**

| | Prices Nov. 23 | Prices Nov. 16 | Prices Nov. 9 |
|---|---|---|---|
| 50-52, 437 e.p. naphtha | 3.75 – 3.875 | 3.75 – 3.875 | 3.625– 3.75 |
| U. S. Motor Gasoline: | | | |
| Below 57 octane number | 4.125– 4.375 | 4.375– 4.625 | 4.50 – 4.75 |
| 57-65 octane number | 4.375– 4.625 | 4.625– 4.875 | 4.75 – 5.00 |
| Above 65 octane number | 4.75 – 5.00 | 5.00 – 5.25 | 5.00 – 5.25 |
| 60-62, 437 e.p. gasoline | 4.25 – 4.50 | 4.50 – 4.75 | 4.625– 4.75 |
| 60-62 400 e.p. gasoline | 4.375– 4.625 | 4.625– 4.875 | 4.75 – 4.875 |
| 64-66 375 e.p. gasoline | 4.875– 5.125 | 5.00 – 5.25 | 5.00 – 5.25 |
| 68-70 350-360 e.p. gasoline | 5.125– 5.375 | 5.375– 5.625 | †5.50 – 5.75 |
| *Domestic Aviation Gasoline | 5.75 – 6.00 | 5.75 – 6.00 | 5.75 – 6.00 |
| 41-43 w.w. kerosine | 2.125– 2.25 | 2.125– 2.25 | 2.125– 2.25 |
| 42-44 w.w. kerosine | 2.25 – 2.375 | 2.25 – 2.375 | 2.25 – 2.375 |
| 38-40 p. w. distillate | 1.875– 2.00 | 1.875– 2.00 | 1.875– 2.00 |
| 38-40 straw distillate | 1.75 – 1.875 | 1.75 – 1.875 | 1.75 – 1.875 |
| 32-36 ordinary dark gas oil | 1.25 – 1.375 | 1.25 – 1.375 | 1.25 – 1.375 |
| 32-36 dark zero gas oil | 1.50 – 1.625 | 1.50 – 1.625 | 1.50 – 1.625 |
| 32-36 straw zero gas oil | 1.625– 1.75 | 1.625– 1.75 | 1.625– 1.75 |
| 28-30 zero fuel oil (per bbl.) | $0.475–$0.525 | $0.475–$0.525 | †$0.475–$0.525 |
| 28-30 fuel oil (per bbl.) | $0.40 –$0.425 | $0.40 –$0.425 | $0.40 –$0.425 |
| 24-26 fuel oil (per bbl.) | $0.30 –$0.325 | $0.30 –$0.325 | $0.30 –$0.325 |
| 18-22 fuel oil, (per bbl.) | $0.225–$0.25 | $0.225–$0.25 | $0.225–$0.25 |
| 18-22 zero fuel oil (per bbl,) | $0.275–$0.30 | $0.275–$0.325 | $0.275–$0.325 |
| 14-16 fuel oil (per bbl.) | $0.20 –$0.25 | $0.20 –$0.25 | $0.20 –$0.25 |

*Prices are based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167° F., and not less than 122° F.; 50% recovery at 221°; 90% at 311°; 96% at 347°; end point 374° F. Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

†Nominal.

# Three Tax Evasion Suits Brought in Far Western States

LOS ANGELES, Nov. 18

CHARGES of gasoline tax evasions have been made at three points on the Pacific Coast as a result of investigations by state authorities.

For failure to pay $2383 in tax on 47,000 gallons of gasoline shipped into Arizona, G. J. Dowding, and George Roberson, operating as distributors, were sued by the Arizona state motor vehicle department.

In the complaint it was charged that, from June to October 31, the two imported and sold in Arizona 47,666 gallons more than they had reported. Based on a five-cent tax rate, the amount due was actually $2,383.30, plus a 25 per cent penalty for failure to report, or a total of $2989.12, which amount is asked of the distributors plus interest and costs.

In California, W. G. Phillips, president of the Kettleman Hills Gasoline Co., operating a topping plant running government royalty oil from the Kettleman field, has been charged with failure to report the sale of approximately 500,000 gallons of gasoline.

The defendant claimed the commodity sold was fuel oil. Latest reports are the state received judgement in the case.

Reports to the California State Board of Equalization said George Holmes, superintendent of the Lakeview Refining Co. operating in the Lower San Joaquin Valley near Maricopa, had been charged with selling between 35,000 and 50,000 gallons of gasoline without paying the tax and without the knowledge of the company.

Realizing that tax-free gasoline sold in competition with a tax-paid product is responsible, to a large degree, for the unstability of Pacific Coast gasoline markets, state and oil company officials are making every effort to check sale and delivery of gasoline.

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### Oil Station Sales Biggest

WASHINGTON—Chain filling stations have the largest volume of business among other retail chain stores, even exceeding the food group of chain stores by 5 per cent.

Sales of all chain stores totaled $10,771,984,034 in 1929, the chain stores numbering 7046 and operating 159,826 stores or units, according to a summary of retail distribution by chains just made public by the Bureau of the Census.

Sales of the filling station group totaled 33.4 per cent. The four next highest were general merchandise group, 31.8 per cent; food group, 28.5 per cent; apparel group, 27.7 per cent; cigar stores, 24.6 per cent.

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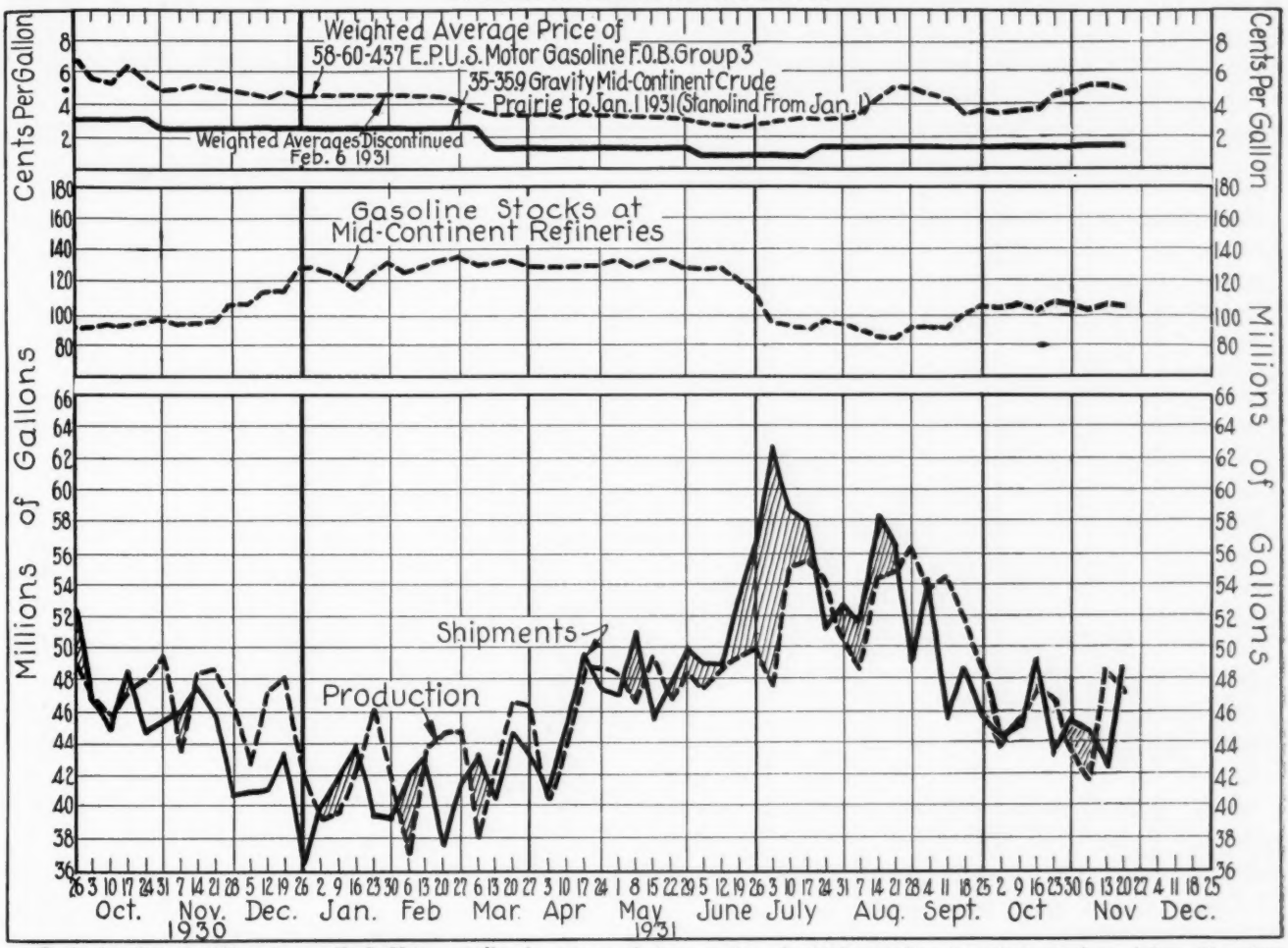
### Denies Oil Burner Discrimination

WASHINGTON, Nov. 23. — Denial that the government discriminates against oil heating plants in public buildings has been made by the supervising architect of the treasury department. The American Oil Burner Association had made such charges.

The burner association alleged that its members were prohibited from bidding on certain projects. The government architect replied that the department makes cost studies on various fuels before calling for heating equipment bids and then calls for bids on only equipment to burn the type of fuel selected.

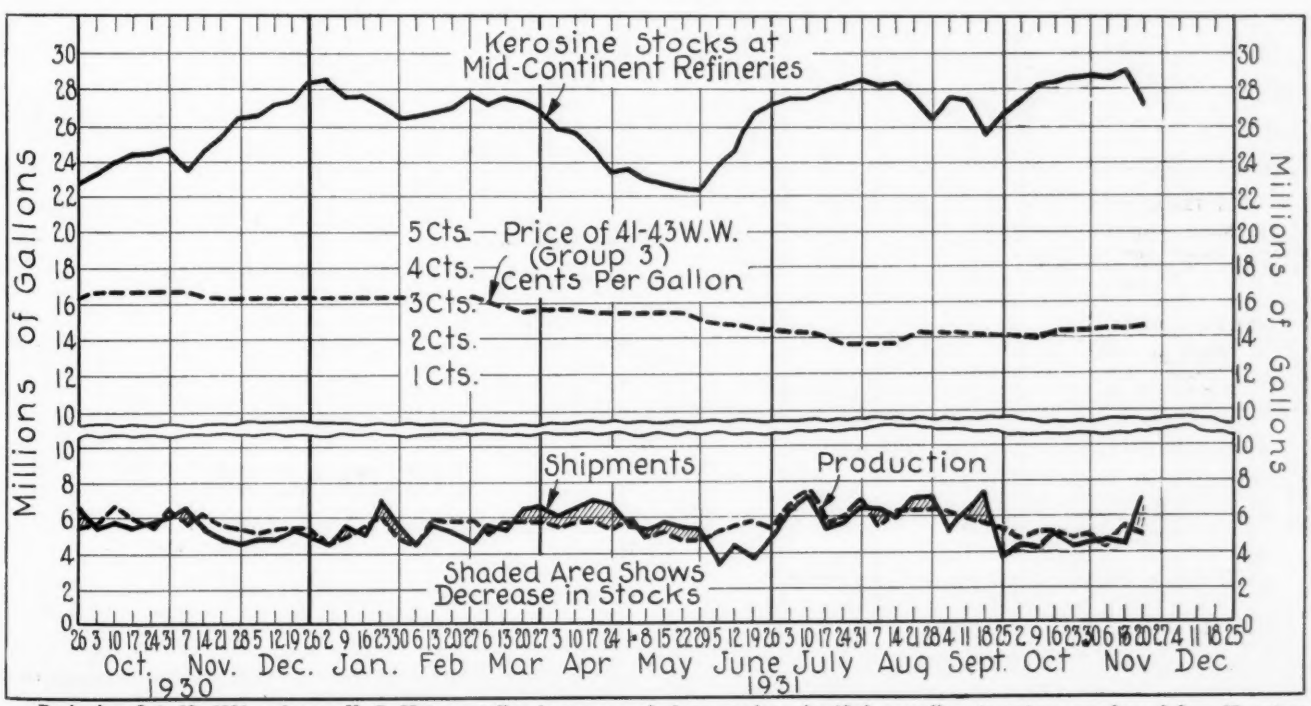
# Barometer of Mid-Continent Refinery Market—Week Ending November 20

*Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News*


Weighted Average Price of
58-60-437 E.P.U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude
Prairie to Jan. 1 1931 (Stanolind From Jan. 1)
Weighted Averages Discontinued Feb. 6 1931
Cents Per Gallon
Gasoline Stocks at Mid-Continent Refineries
Millions of Gallons
Shipments
Production
Oct. Nov. Dec. Jan. Feb Mar Apr May June July Aug. Sept. Oct Nov Dec.
1930
1931

**Beginning Oct. 9, 1931, price on U. S. Motor gasoline is average of three grades, classified according to octane number: below 57 octane number, 57-65 octane, and above 65 octane number.**

*Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on page 66*


Kerosine Stocks at Mid-Continent Refineries
Millions of Gallons
5 Cts. — Price of 41-43 W.W. (Group 3)
4 Cts. — Cents Per Gallon
3 Cts.
2 Cts.
1 Cts.
Shipments
Production
Shaded Area Shows Decrease in Stocks
Oct. Nov. Dec. Jan. Feb Mar Apr May June July Aug Sept. Oct Nov Dec
1930
1931

**Beginning Oct. 12, 1931, price on U. S. Motor gasoline is average of three grades, classified according to octane number: below 57 octane number, 57-65 octane, and above 65 octane number.**

# Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, except where $ is shown in tank car lots, f.o.b. Refinery. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted.

*(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)*

## GASOLINE AND NAPHTHA

**OKLAHOMA** (F. o. b. Oklahoma refineries)

| | Prices Nov. 23 | Prices Nov. 16 | Prices Nov. 9 |
|---|---|---|---|
| 50-52 450 e.p. naphtha... | †3.75 – 4.00 | †3.75 – 4.00 | †3.75 – 4.00 |
| U. S. Motor Gasoline | | | |
| Below 57 octane number | 4.25 – 4.75 | 4.75 – 5.00 | 4.75 – 5.00 |
| 57-65 Octane number.... | 4.50 – 5.00 | 5.00 – 5.25 | 5.00 – 5.25 |
| Above 65 Octane number | †4.75 – 5.25 | †5.25 – 5.50 | †5.25 – 5.50 |
| 60-62, 400 E.P. Gasoline | | | |
| Below 57 Octane number | 4.50 – 5.00 | 5.00 – 5.25 | 5.00 – 5.25 |
| 57-65 Octane number.... | 4.75 – 5.25 | 5.25 – 5.50 | 5.25 – 5.50 |
| Above 65 Octane number. | 5.00 – 5.50 | 5.50 – 5.75 | 5.50 – 5.75 |
| 64-66, 375 E.P. Gasoline | | | |
| Below 57 Octane number | 4.75 – 5.25 | 5.125– 5.25 | 5.125– 5.25 |
| 57-65 Octane number.... | 5.00 – 5.25 | 5.25 – 5.375 | 5.25 – 5.375 |
| Above 65 Octane number | †5.25 – 5.50 | †5.375– 5.625 | †5.375– 5.625 |
| 68-70 350-360 e.p. gasoline | †5.50 | †5.50 – 5.75 | †5.50 – 5.75 |
| ‡Domestic Aviation Gasoline..... | †6.00 – 6.375 | †6.00 – 6.375 | 5.875– 6.00 |

‡Prices based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167° F., and not less than 122° F., 50% rec. at 221°; 90% at 311°; 96% at 347°; end point, 374° F. Fighting grade in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

**PENNSYLVANIA** (F. o. b. Western Pennsylvania refineries)

| | | | |
|---|---|---|---|
| 52-54 Naphtha..... | 4.125– 4.25 | 4.00 – 4.25 | 4.00 – 4.25 |
| 54-56 Naphtha..... | 4.25 – 4.50 | 4.25 – 4.50 | 4.25 – 4.50 |
| 58-60 U.S. Motor 437 e.p. | 4.50 – 5.00 | 4.50 – 4.75 | 4.375– 4.75 |
| 60-62 400-410 e.p. gasoline | 4.625– 5.00 | 4.625– 5.00 | 4.50 – 5.00 |
| 64-66 390 e.p. gasoline... | 4.875– 5.25 | 4.875– 5.125 | 4.875– 5.125 |
| 68-70 350-360 e.p..... | 5.625– 6.00 | 5.625– 6.00 | 5.50 – 6.00 |

**OHIO (Quotations of S. O. Ohio. 4c state tax to be added. Delivered any point in Ohio.)**

| | | | |
|---|---|---|---|
| U. S. Motor Gasoline.... | 8.25 | 8.25 | 8.25 |
| 60-65 Octane number.... | 8.50 | 8.50 | 8.50 |

**KANSAS** (F. o. b. refinery, Kansas destination)

| | | | |
|---|---|---|---|
| U. S. Motor Gasoline | | | |
| Below 57 Octane number | 4.625– 4.875 | 5.00 – 5.25 | 5.00 – 5.125 |
| 57-65 Octane number.... | 4.875– 5.125 | 5.25 – 5.50 | 5.25 – 5.375 |
| Above 65 Octane number | 5.125– 5.375 | 5.50 – 5.75 | 5.50 – 5.625 |
| 60-62 400 e.p. gasoline.... | 4.875– 5.125 | 5.125– 5.375 | 5.25 – 5.37 |
| 64-66 375 e.p. gasoline.... | 5.375 | 5.375– 5.50 | 5.375– 5.625 |

**NORTH TEXAS** (F. o. b. North Texas refineries)

| | | | |
|---|---|---|---|
| 56-58 450 e.p. gasoline... | †4.00 | †4.25 – 4.375 | †4.00 – 4.25 |
| 58-60 450 e.p. gasoline... | †4.00 | †4.25 – 4.375 | †4.00 – 4.25 |
| U. S. Motor Gasoline | | | |
| Below 57 Octane number | 4.25 – 4.50 | 4.625– 4.75 | 4.625– 4.75 |
| 57-65 Octane number.... | 4.50 – 4.75 | 4.875– 5.00 | 4.875– 5.00 |
| Above 65 Octane number | 4.75 – 5.00 | 5.125– 5.25 | 5.125– 5.25 |
| 60-62 400 e.p. gasoline... | 4.50 – 4.75 | 4.875– 5.00 | 4.875– 5.00 |
| 64-66 390 e.p. gasoline... | 4.625– 4.75 | 4.875– 5.125 | 4.875– 5.125 |
| 64-66 375 e.p. gasoline... | 4.75 – 5.00 | 5.00 – 5.25 | 5.00 – 5.25 |
| 68-70 350-360 e.p. gasoline | 5.00 – 5.25 | 5.375– 5.50 | 5.375– 5.50 |

****WEST TEXAS** (F. o. b. West Texas refinery, for unrestricted shipment)

| | | | |
|---|---|---|---|
| U. S. Motor Gasoline | | | |
| Below 57 Octane number | 4.25 – 4.50 | 4.50 – 4.75 | 4.625– 4.75 |
| 57-65 Octane number.... | 4.50 – 4.75 | 4.75 – 5.00 | 4.875– 5.00 |
| Above 65 Octane number | 4.75 – 5.00 | 5.00 – 5.25 | 5.125– 5.25 |

**NORTH LOUISIANA** (N. La., Ark. and Miss. destination)

| | | | |
|---|---|---|---|
| U. S. Motor Gasoline | | | |
| Below 57 Octane number | 5.00 | 5.00 | 5.00 |
| 57-65 Octane number.... | †5.25 | †5.25 | †5.25 |
| Above 65 Octane number | †5.50 | †5.50 | †5.50 |

**ARKANSAS** (Ark., N. La., and Miss. destination)

| | | | |
|---|---|---|---|
| U. S. Motor Gasoline | | | |
| Below 57 Octane number | 5.00 | 5.00 | 5.00 |
| 57-65 Octane number.... | †5.25 | †5.25 | †5.25 |
| Above 65 Octane number | †5.50 | †5.50 | †5.50 |

**CALIFORNIA** (3c tax to be added to California gasoline prices if used in state.)

| | | | |
|---|---|---|---|
| 54-58 U.S. Motor 437 e.p. | 6.00 – 8.50 | 5.75 – 8.50 | 6.50 – 8.50 |
| 54-58 U.S. Motor, for outside state shipment.... | 5.75 – 6.50 | 5.75 – 6.50 | 5.75 – 6.50 |
| 58-61 375-400 e.p. gasoline | 9.50 –10.50 | 9.50 –10.50 | 9.50 –10.50 |
| 42-45 Engine Distillate 445-480 e.p..... | 7.00 – 8.00 | 7.00 – 8.00 | 7.00 – 8.00 |

**†Prices Nominal. ††Only one refiner quoting. *Quotations only.**

## NATURAL GASOLINE

End point of all grades, not over 375F.

**OKLAHOMA** (F. o. b. Group 3)

| | Prices Nov. 23 | Prices N v. 16 | Prices Nov. 9 |
|---|---|---|---|
| Grade AA, 80-87.9, 90% Recovery..... | 3.875– 4.125 | 4.375– 4.50 | 4.50 |
| Grade A, 72-79.9, 90% Recovery..... | †4.375– 4.625 | †4.75 – 4.875 | †4.75 – 5.00 |
| Grade BB, 84-92, 85% Recovery..... | †3.75 | †4.25 | †4.50 |
| Grade B, 76-83.9, 85% Recovery..... | †3.75 | †4.25 | †4.50 |
| Grade C, 80-92, 78% Recovery..... | †3.75 | †4.25 | †4.50 |
| Grade 26-70..... | 3.875– 4.125 | 4.375– 4.50 | 4.50 |

**NORTH TEXAS** (F. o. b. Breckenridge)

| | | | |
|---|---|---|---|
| Grade AA, 80-87.9, 90% Recovery..... | 3.75 – 4.00 | 4.125– 4.25 | 4.25 |
| Grade A, 72-79.9, 90% Recovery..... | †4.125 | †4.50 | †4.50 |
| Grade BB, 84-92, 85% Recovery..... | †3.75 | †4.125 | †4.25 |
| Grade B, 76-83.9, 85% Recovery..... | †3.75 | †4.125 | †4.25 |
| Grade C, 80-92, 78% Recovery..... | †3.75 | †4.125 | †4.25 |
| Grade 26-70..... | 3.75 – 4.00 | 4.125– 4.25 | 4.25 |

**NORTH LOUISIANA** (F. o. b. Monroe District)

| | | | |
|---|---|---|---|
| Grade AA..... | †3.875– 4.125 | †4.50 | †4.50 |
| Grade BB..... | †3.75 | †4.50 | †4.50 |
| Grade C..... | †3.75 | †4.50 | †4.50 |

**CALIFORNIA** (F. o. b. California refineries)

| | | | |
|---|---|---|---|
| 75-85, 375-390 e.p. for blending..... | 5.25 – 6.00 | 5.75 – 6.25 | 5.75 – 6.25 |

## BURNING OILS

**PENNSYLVANIA** (F. o. b. Western Pennsylvania refineries)

| | | | |
|---|---|---|---|
| 45 w.w. kerosine..... | 3.875– 4.00 | 3.75 – 3.875 | 3.625– 3.875 |
| 46 w.w. kerosine..... | 4.00 – 4.25 | 3.875– 4.00 | 3.75 – 4.00 |
| 47 w.w. kerosine..... | 4.125– 4.50 | 4.00 – 4.25 | 4.00 – 4.25 |

**OKLAHOMA** (F. o. b. Oklahoma refineries)

| | | | |
|---|---|---|---|
| 41-43 w.w. kerosine..... | 2.25 – 2.375 | 2.125– 2.375 | 2.125– 2.25 |
| 42-44 w.w. kerosine..... | 2.375 | 2.25 – 2.375 | 2.25 – 2.375 |

**KANSAS** (F. o. b. refinery Kansas destination)

| | | | |
|---|---|---|---|
| 41-43 w.w. kerosine..... | 2.50 – 2.75 | 2.50 – 2.75 | 2.50 – 2.625 |
| 42-44 w.w. kerosine..... | 2.625– 2.875 | 2.625– 2.875 | 2.625– 2.75 |

**NORTH TEXAS** (F. o. b. North Texas refineries)

| | | | |
|---|---|---|---|
| 40-42 w.w. kerosine..... | †2.125– 2.375 | †2.125– 2.25 | †2.125 |
| 41-43 w.w. kerosine..... | †2.25 – 2.50 | †2.25 – 2.375 | †2.25 |

**NORTH LOUISIANA** (N. La., Ark. and Miss. destination)

| | | | |
|---|---|---|---|
| 41-43 w.w. kerosine..... | 3.00 – 3.25 | 3.00 – 3.25 | 2.75 – 3.00 |

**ARKANSAS** (Ark., N. La. and Miss. destination)

| | | | |
|---|---|---|---|
| 41-43 w.w. kerosine..... | 3.00 – 3.25 | 3.00 – 3.25 | 2.75 – 3.00 |

**CALIFORNIA** (F. o. b. California refineries)

| | | | |
|---|---|---|---|
| 38-40 w.w. kerosine..... | 4.00 – 5.00 | 4.00 – 5.00 | 4.00 – 5.00 |

## NEUTRAL OIL

**PENNSYLVANIA** (F. o. b. Western Pennsylvania refineries)

| Vis. | (Viscosity at 70° F.) | | |
|---|---|---|---|
| 200 No. 3 color, 420-425 flash..... | 20.50 –21.00 | 21.00 –21.50 | 21.00 –22.00 |
| 180 No. 3 color, 410-415 flash..... | 18.50 –19.00 | 19.50 | 19.50 –20.00 |
| 150 No. 3 color, 400-405 flash..... | 16.00 –17.00 | 17.00 | 17.00 –17.50 |

Note: Refiners quote 4 to 6c higher for 0 to 10 pour test oils; 3 to 5c higher for 10 to 15 pour test oils than prices shown above on this date.

****Prices represent quotations and sales**

# Refinery Markets Wax, Lubricants, Heavy Oil

Prices given below are in cents per gallon, except where $ is shown in tank car lots, f.o.b. Refinery. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted.

*(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)*

**MID-CONTINENT (F. o. b. Mid-Continent refineries)

| Vis. | Color | Prices Nov. 23 (Viscosity at 100° F.) 0 to 10 Pour Point | 15 to 30 Pour Point | Prices Nov. 16 (Viscosity at 100° F.) 0 to 10 Pour Point | 15 to 30 Pour Point |
|---|---|---|---|---|---|
| 100 | No. 2 | 4.75 | 4.00 | 4.75 | 4.00 |
| 150 | No. 3 | 7.00 – 7.25 | 6.75 | 7.00 – 7.25 | 6.75 |
| 150 | No. 4 | 6.75 | 6.25 | 6.75 | 6.25 |
| 180 | No. 3 | 8.25 – 8.75 | 8.25 | 8.25 – 8.75 | 8.25 |
| 180 | No. 4 | 8.25 | 8.00 | 8.25 | 8.00 |
| 180 | No. 5 | 7.50 | 7.00 | 7.50 | 7.00 |
| 200 | No. 3 | 9.50 –10.00 | 9.00 – 9.25 | 9.50 –10.00 | 9.00 – 9.25 |
| 200 | No. 4 | 9.25 – 9.50 | 9.00 | 9.25 – 9.50 | 9.00 |
| 200 | No. 5 | 9.00 – 9.25 | 8.50 | 9.00 – 9.25 | 8.50 |
| 220 | No. 3 | 9.75 | 9.50 | 9.75 | 9.50 |
| 220 | No. 4 | 9.50 | 9.00 | 9.50 | 9.00 |
| 220 | No. 5 | 9.25 | 8.75 | 9.25 | 8.75 |
| 240 | No. 3 | 11.00 –11.50 | 11.00 | 11.00 –11.50 | 11.00 |
| 240 | No. 4 | 10.75 | 10.25 | 10.75 | 10.25 |
| 240 | No. 5 | 10.50 | 10.00 | 10.50 | 10.00 |
| 280 | No. 3 | 13.00 | 12.50 | 13.00 | 12.50 |
| 280 | No. 4 | 12.00 | 11.50 | 12.00 | 11.50 |
| 280 | No. 5 | 11.75 | 11.25 | 11.75 | 11.25 |

GULF COASTAL (F. o. b. Gulf Coastal refineries)

| Vis. | Color | Prices Nov. 23 | Prices Nov. 16 | Prices Nov. 9 |
|---|---|---|---|---|
| | | (Viscosity at 100° F., pour test 0) | | |
| 100 | No. 2 Pale | 5.25 – 5.50 | 5.25 – 5.50 | 5.25 – 5.50 |
| 200 | No. 3 Pale | 7.25 – 7.50 | 7.25 – 7.50 | 7.25 – 7.50 |
| 300 | No. 3 Pale | 8.25 – 8.50 | 8.25 – 8.50 | 8.25 – 8.50 |
| 500 | No. 3½ Pale | 9.25 – 9.50 | 9.25 – 9.50 | 9.25 – 9.50 |
| 750 | No. 4 Pale | 10.25 –10.50 | 10.25 –10.50 | 10.25 –10.50 |
| 1200 | No. 4 Pale | 12.25 –12.50 | 12.25 –12.50 | 12.25 –12.50 |
| 2000 | No. 4-5 Pale | 13.25 –13.50 | 13.25 –13.50 | 13.25 –13.50 |
| 200 | No. 5½ Red Oil | 6.25 – 6.50 | 6.25 – 6.50 | 6.25 – 6.50 |
| 300 | No. 5½ Red Oil | 7.25 – 7.50 | 7.25 – 7.50 | 7.25 – 7.50 |
| 500 | No. 6 Red Oil | 8.25 – 8.50 | 8.25 – 8.50 | 8.25 – 8.50 |
| 750 | No. 6 Red Oil | 9.25 – 9.50 | 9.25 – 9.50 | 9.25 – 9.50 |
| 1200 | No. 5-6 Red Oil | 11.25 –11.50 | 11.25 –11.50 | 11.25 –11.50 |
| 2000 | No. 5 Plus Red Oil | 13.25 –13.50 | 13.25 –13.50 | 13.25 –13.50 |

CALIFORNIA (F. o. b. California refineries)

| Vis. | Color | (Viscosity at 100° F.) | | |
|---|---|---|---|---|
| 100 | No. 3 | 8.00 | 8.00 | 8.00 |
| 200 | No. 3 | 10.00 | 10.00 | 10.00 |
| 300 | No. 3 | 10.50 | 10.50 | 10.50 |
| 450 | No. 3 | 12.00 | 12.00 | 12.00 |
| 550 | No. 3 | 13.50 | 13.50 | 13.50 |
| 600 | No. 3 | 13.50 | 13.50 | 13.50 |
| 200 | No. 5 | 10.00 | 10.00 | 10.00 |
| 300 | No. 5 | 10.50 | 10.50 | 10.50 |
| 400 | No. 5 | 12.00 | 12.00 | 12.00 |
| 500 | No. 5 | 13.00 | 13.00 | 13.00 |
| 600 | No. 5 | 13.50 | 13.50 | 13.50 |
| 700 | No. 7 | 13.50 | 13.50 | 13.50 |

## CYLINDER STOCKS

MID-CONTINENT (F. o. b. Mid-Continent refineries)

(Prices represent quotations and sales).

| | | | |
|---|---|---|---|
| 190-200 Vis. D at 210° Brt. St. | 20.50 –22.00 | 20.50 –22.00 | 20.50 –22.00 |
| 150-160 Vis. D at 210° Brt. St., 0-10 cold test | 20.00 –20.50 | 20.00 –20.50 | 20.00 –20.50 |
| 150-160 Vis. D at 210° Brt. St., 10-25 cold test | 19.50 –20.00 | 19.50 –20.00 | 19.50 –20.00 |
| 150-160 Vis. D Brt. Stock, 25-40 cold test | 18.50 –19.00 | 18.50 –19.00 | 18.50 –19.00 |
| 150-160 Vis. E 210° Brt. St. | 19.00 | 19.00 | 19.00 |
| 600 St. Ref. Olive Green | 5.25 – 6.00 | 5.25 – 6.25 | 5.50 – 6.50 |
| 600 St. Ref. Dark Green | 4.00 – 5.00 | 4.25 – 5.25 | 4.50 – 5.50 |
| Black Oil | 3.25 – 4.00 | 3.25 – 4.00 | 3.25 – 4.00 |

PENNSYLVANIA (F. o. b. Western Penna. refineries) (A.S.T.M. Tests)

| | | | |
|---|---|---|---|
| 600 Steam Refined, filterable | 12.25 –13.00 | 13.50 –14.00 | 13.50 –14.00 |
| 650 Steam Refined | 16.00 –17.00 | 16.50 –17.50 | 16.50 –17.50 |
| 600 Flash | 17.50 –18.50 | 18.00 –19.00 | 18.00 –19.00 |
| 630 Flash | 21.00 –23.00 | 21.00 –23.00 | 21.00 –23.00 |
| 600 Warren E | 16.75 –17.50 | 17.00 –18.00 | 17.00 –18.00 |
| Cold Test Stocks, 140-150 vis. at 210°, 540-550 flash, No. 8 color: | | | |
| 20 pour test and below | 23.50 –25.00 | 25.00 –26.00 | 25.00 – 27.00 |
| 25 and 35 pour test | 22.00 –23.00 | 23.00 –24.00 | 23.00 – 24.00 |
| 40 pour test and above | 21.50 –22.50 | 23.00 | 23.00 – 23.50 |

## WAX

PENNSYLVANIA (Per pound, F. o. b. New York)

| | | | |
|---|---|---|---|
| 122-124 white crude scale a.m.p. | 2.125– 2.25 | 2.00 – 2.125 | 2.00 – 2.125 |
| 124-126 white crude scale, a.m.p. | 2.125– 2.25 | 2.00 – 2.125 | 2.00 – 2.125 |

†Prices nominal ††Only one refiner quoting *Quotations only

**OKLAHOMA (Per pound in barrels; in a few instances, per pound in burlap bags; F. o. b. Oklahoma refineries.)

| | Prices Nov. 23 | Prices Nov. 16 | Prices Nov. 9 |
|---|---|---|---|
| 124-126 White Crude Scale, a.m.p. | 1.75 – 1.875 | 1.75 – 1.875 | 1.75 – 1.875 |

## DISTILLATE, GAS AND FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)

| | | | |
|---|---|---|---|
| 36-40 fuel oil | 2.625– 3.00 | 2.625– 3.00 | 2.50 – 3.00 |

OKLAHOMA (F. o. b. Oklahoma refineries)

| | | | |
|---|---|---|---|
| 38-40 straw distillate | 1.875– 2.00 | 1.875– 2.00 | 1.875– 2.00 |
| 36-38 straw distillate | †1.75 – 1.875 | †1.75 – 1.875 | †1.75 – 1.875 |
| 32-36 straw gas oil | 1.375– 1.50 | 1.375– 1.50 | 1.375– 1.50 |
| 32-36 straw gas oil zero | †1.75 – 1.875 | †1.75 – 1.875 | †1.75 – 1.875 |
| 32-36 dark gas oil | 1.375– 1.50 | 1.375– 1.50 | 1.375– 1.50 |
| 32-36 dark gas oil zero | †1.75 – 1.875 | †1.75 – 1.875 | †1.75 – 1.875 |
| 28-30 zero fuel oil (per bbl.) | $0.525–$0.55 | $0.525–$0.55 | $0.525–$0.55 |
| 28-30 fuel oil (per bbl.) | $0.425–$0.45 | $0.425–$0.45 | $0.425–$0.45 |
| 26-28 fuel oil (per bbl.) | $0.375–$0.40 | $0.375–$0.40 | $0.375–$0.40 |
| 24-26 fuel oil (per bbl.) | $0.35 –$0.375 | $0.35 –$0.375 | $0.35 –$0.375 |
| 22-26 fuel oil (per bbl.) | $0.325–$0.35 | $0.325–$0.35 | $0.325–$0.35 |
| 18-22 fuel oil (per bbl.) | $0.30 –$0.325 | $0.30 –$0.325 | $0.30 –$0.325 |
| 16-20 fuel oil (per bbl.) | $0.275–$0.30 | $0.275–$0.30 | $0.275–$0.30 |
| 14-16 fuel oil (per bbl.) | $0.225–$0.25 | $0.225–$0.25 | $0.225–$0.25 |

KANSAS (F. o. b. refinery Kansas destination)

| | | | |
|---|---|---|---|
| 38-40 straw distillate | 2.125– 2.25 | 2.125– 2.25 | 2.125– 2.25 |
| 36-38 straw distillate | 2.00 – 2.125 | 2.00 – 2.125 | 2.00 – 2.125 |
| 32-36 straw gas oil | 1.875– 2.00 | 1.875– 2.00 | 1.875– 2.00 |
| 18-22 fuel oil (per bbl.) | $0.375–$0.475 | $0.375–$0.475 | $0.40 –$0.50 |
| 10-14 fuel oil (per bbl.) | $0.325–$0.425 | $0.325–$0.425 | $0.35 –$0.45 |

NORTH TEXAS (F. o. b. North Texas refineries)

| | | | |
|---|---|---|---|
| 38-40 straw distillate | †1.875– 2.00 | †1.875– 2.00 | †1.875 |
| 38-40 p.w.treated distillate | †2.00 – 2.125 | †1.875– 2.125 | †1.875– 2.00 |
| 32-36 gas oil, cracked | 1.50 – 1.75 | 1.50 – 1.625 | 1.375 |
| 32-36 St. reduced gas oil | 1.375– 1.50 | 1.375 | 1.375 |
| 24-26 fuel oil (per bbl.) | $0.375–$0.40 | $0.35 –$0.375 | $0.35 –$0.375 |
| 20-24 fuel oil (per bbl.) | $0.325–$0.35 | $0.30 –$0.325 | $0.30 –$0.325 |
| 18-22 fuel oil (per bbl.) | $0.30 –$0.325 | $0.30 | $0.275–$0.30 |

**WEST TEXAS (F. o. b. West Texas refinery, for unrestricted shipment)

| | | | |
|---|---|---|---|
| 30-32 gas oil | †1.375– 1.50 | †1.375– 1.50 | †1.375 |
| 28-30 zero gas oil | †1.375– 1.50 | †1.375– 1.50 | †1.375 |
| 18-22 fuel oil (per bbl.) | $0.30 | $0.30 | $0.275–$0.30 |

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

| | | | |
|---|---|---|---|
| 32-36 gas oil | 2.00 – 2.25 | 2.00 | 2.00 |
| 32-36 gas oil, zero | 2.25 – 2.50 | 2.25 | 2.25 |
| 14-16 fuel oil (per bbl.) | $0.40 –$0.45 | $0.40 –$0.45 | $0.40 –$0.45 |

ARKANSAS (Ark., N. La. and Miss. destination)

| | | | |
|---|---|---|---|
| 32-36 gas oil | 2.00 – 2.25 | 2.00 | 2.00 |
| 32-36 gas oil, zero | 2.25 – 2.50 | 2.25 | 2.25 |
| 28-30 gas oil | †2.00 | †1.75 | †1.75 |
| 20-24 fuel oil (per bbl.) | $0.525–$0.55 | $0.525–$0.55 | $0.525–$0.55 |
| 9-12 fuel oil (per bbl.) | $0.425–$0.45 | $0.425–$0.45 | $0.425–$0.45 |
| Black oil | 3.00 | 3.00 | 3.00 |

CALIFORNIA (F. o. b. San Joaquin Valley. Nominal pipe line charge to San Francisco 24c per bbl. more and to San Pedro 20c per bbl. more.)

| | | | |
|---|---|---|---|
| 14-18 fuel oil (per bbl.) | $0.45 –$0.55 | $0.45 –$0.55 | $0.45 –$0.55 |
| 14-18 Bunker oil (per bbl.) | $0.55 –$0.75 | $0.55 –$0.75 | $0.55 –$0.75 |
| 30-34 gas oil (per bbl.) | $0.85 –$0.95 | $0.80 –$0.95 | $0.80 –$0.95 |
| 27 Plus Diesel oil (per bbl.) | $0.80 –$0.90 | $0.80 –$0.95 | $0.80 –$0.95 |

## PETROLATUMS

PENNSYLVANIA (Per pound, in barrels, carload lots, f. o. b. Penna. refinery. In tank cars ½c to ¾c per pound less.) Quotations are from majority of refiners.

| | | | |
|---|---|---|---|
| Snow White | 6.75 – 7.50 | 6.75 – 7.50 | 6.75 – 7.50 |
| Lily White | 5.75 – 6.50 | 5.75 – 6.50 | 5.75 – 6.50 |
| Cream White | 4.75 – 5.50 | 4.75 – 5.50 | 4.75 – 5.50 |
| Light Amber | 2.625– 3.25 | 2.625– 3.25 | 2.625– 3.25 |
| Amber | 2.375– 3.00 | 2.375– 3.00 | 2.375– 3.00 |
| Red | 2.00 – 2.75 | 2.00 – 2.75 | 2.00 – 2.75 |

## PETROLEUM COKE

**OKLAHOMA (F. o. b. Oklahoma refineries)

(Per ton in car lots)

| | | | |
|---|---|---|---|
| Lump | $3.00 –$4.00 | $3.00 –$4.00 | $3.00 –$4.00 |
| Stll run | $2.00 | $2.00 | $2.00 |
| Breeze | $0.75 –$1.00 | $0.75 –$1.00 | $0.75 –$1.50 |

# New Refining Patents

**Fractionation. U. S. P. 1 804 553 and 1 804 554, May 12, 1931, applications filed Jan. 14 and Nov. 12, 1926; Carbon P. Dubbs, assignor to Universal Oil Products Co.**

THESE inventions relate to a method and an improved apparatus for the fractional distillation of petroleum hydrocarbons and the like. The preferred apparatus, as shown in the drawing, has a vertical shell 1 with removable head 2. The inner shell 4 contains vertically disposed helical baffles 3, having their outer edges solidly joined to the wall of the shell 4, to prevent channelling of the vapors. The baffle system is supported by central core rod 5; and the inner shell is flanged at 6 to fit between the outer shell and its removable head, so that the inner shell and baffles can be withdrawn.

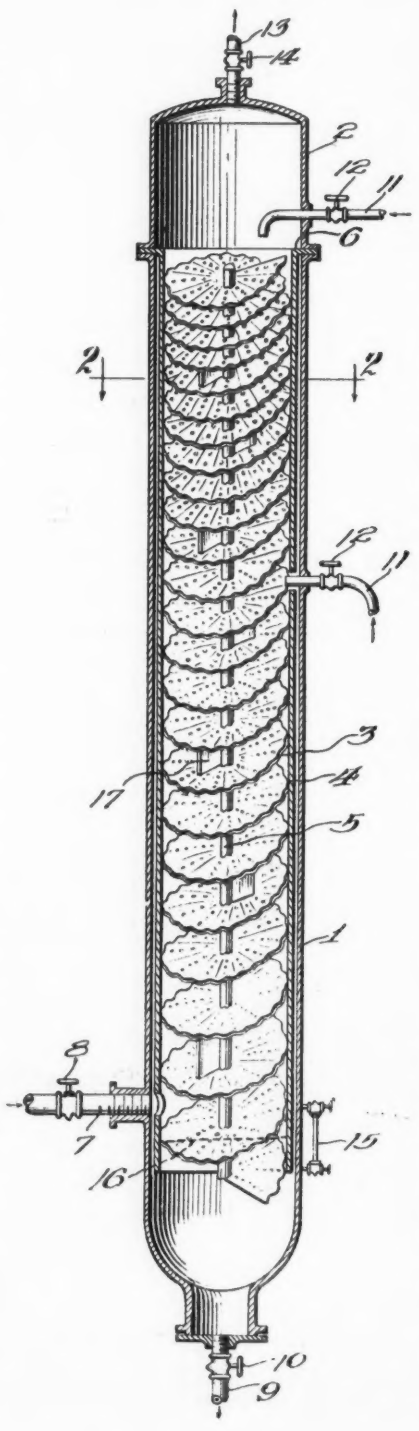
Vapor enters the apparatus at inlet 7, having throttle-valve 8; liquid condensate is drawn off through pipe 9 and throttle-valve 10. Inlets 11, with valves 12, are provided for cooling liquid; 13 is a vapor outlet pipe with valve 14; 15 is a liquid level gage, and 16 indicates liquid level in the rectifying column. Baffles 17 are interposed at intervals throughout the height of the helical baffles. The helix surfaces have corrugations 18 (perforated as at 19), extending at right angles to the helical plane.

The spacing of the spiral decreases toward the top of the tower, to maintain vapor velocity by compensating for the volume loss by condensation. The helical baffle system should be made of thin metal with high heat conductivity, so that heat from the rising vapor is readily transmitted to the pools of liquid accumulating on the upper side; thus evaporation of the lighter fractions is promoted.

### What is Claimed

**1 804 553:** Rectifying apparatus comprising a vertical shell, with vapor inlet near its bottom, draw-off means near its top for uncondensed vapors and gases, a cooling liquid inlet also near its top, a baffle within the shell formed of thin corrugated metal, a central support rod for the baffle, the inner edge of the baffle being wrapped around the rod to form spaced convolutions, of which the spacing decreases toward the top of the rod, the outer edge of the baffle strip being in contact with the shell, the corrugations of the strip being parallel, concentric and extending the full length of the strip.

**1 804 554:** Dephlegmating oil vapors by causing them to rise through a fractionating zone in a continuous helical path in counter-current heat exchange relation with a dephlegmating liquid descending in a helical path through the zone, collecting the liquid in pools during its helical descent, overflowing liquid from the pools in direct contact with the rising vapors, removing the liquid and condensate at the bottom, and drawing off the uncondensed vapors at the top.




**Vacuum Distillation. U. S. P. 1 804-941, May 12, 1931, application filed Dec. 27, 1927; Wm. B. Logan, assignor to The Texas Co.**

A NOVEL procedure has been developed for the vacuum distillation of hydrocarbon oils, a major feature being that cooling is effected by direct introduction of water into the oil vapors. This has the advantage of permitting production of highly purified, stable lubricant distillates, which is impossible in one operation when the older method of cooling with cool oil is employed. A further advantage is that the direct contact of cooling agent and vapor permits application of high vacuum in the distillation; if the cooling agent were applied by indirect contact, e. g. in a cooling coil, use of the vacuum would be impracticable on account of the very large area of pipe surface which would be required for the necessary cooling effect.

In operating the new process, mineral lubricating oil is first vaporized in a still, and the vapors are then passed to a suitable fractionating tower into which water is sprayed at the top. The still and fractionating tower are kept under a vacuum amounting to an absolute pressure of about 25-50 mm. of mercury. Two or more still and fractionator units may be connected in series. The temperature conditions are so adjusted that the oil vapors contain enough heat to vaporize the water spray; the condensed oil falls down the tower, and the steam is withdrawn to a barometric condenser, where it is condensed by cool water, thus contributing to the vacuum effect.

### What is Claimed

Distilling lubricating oil by vaporizing it under a pressure not greater than 25-50 mm. of mercury, passing the vapors into a tower, introducing water into the tower whereby a portion of the vapor is condensed and the water is evaporated, withdrawing steam and oil vapors from the top of the tower and withdrawing the desired lubricating oil condensate from the bottom of the tower.

* * *

**Refining Lubricants. U. S. P. 1 816-872, Aug. 4, 1931, application filed Feb. 13, 1929; Wirt D. Rial.**

SULFURIC acid treatment, alcohol extraction and other known methods of removing objectionable impurities from lubricating oils are expensive, or do not give satisfactory yields. In lubricants from asphalt base or mixed base crudes, the impurities commonly include, naphthenes, unsaturated hydrocarbons, and hydrocarbon derivatives containing sulfur or oxygen. Among the undesirable effects of these impurities is a tendency to cause the oil to emulsify with water when used in contact therewith, e. g. in the lubrication of steam turbines.

It has now been found that such lubricating stocks can be freed from

these impurities and rendered non-emulsifying in water, by a vacuum distillation in absence of air, followed by treatment (still in absence of air) with aqueous potassium hydroxide and steam. In carrying out the invention, the lubricant fraction from asphalt base oils is continuously discharged into re-run stills where it is continuously distilled under vacuum, air being carefully excluded from all the distillation products. The condensate, still in absence of air, is then immediately treated under pressure with aqueous potassium hydroxide, mixture being effected by means of steam, so that emulsifying constituents are removed before oxidation can occur. The product of this treatment is acid-treated, neutralized, re-distilled under vacuum and clarified.

**What is Claimed**

Separating by vacuum distillation a lubricant stock from an asphalt base or mixed base oil, continuously and at once in absence of air condensing and re-distilling the lubricant stock as produced, continuously re-condensing in absence of air and immediately treating in liquid phase with aqueous potassium hydroxide in presence of steam to separate the oxidizable constituents therefrom.

* * *

**Hydrocarbon oxidation. U. S. P. 1 812 714, June 30, 1931, application filed Aug. 4, 1928; Jas. W. Pugh, Ernest Tauch and Thomas E. Warren, assignors to Standard Oil Development Co.**

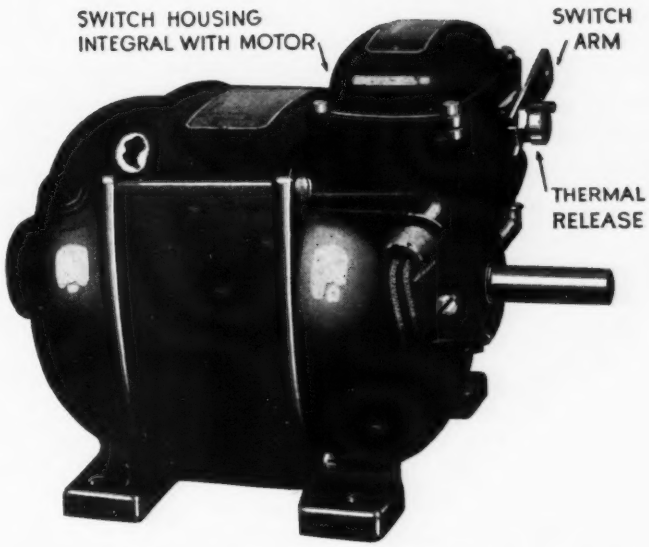
DESIRABLE oxygenated organic compounds can be obtained from petroleum hydrocarbons by a new process which takes advantage of the observation that oxygen gas is appreciably soluble in hydrocarbon oils. Among the products which may be obtained are acetic acid, acetaldehyde and aliphatic alcohols, e.g. ethanol, propanol and butanol. Acetone can also be produced in this way.

In the process of this invention, oil is sprayed into a saturator (which may be a tower with bell cap plates) in contact with pre-cooled compressed air. Oxygen is dissolved in preference to nitrogen by the oil; its concentration may be carried as high as 15 mol-%, but should be kept below the explosive limit and preferably between 5 and 10 mol-%. The temperature should be atmospheric or lower; the preferred pressure range is 1000-3500 lb. per sq. in. The solution of oxygen in oil is pre-heated in a heat exchanger and passed through a reactor, where oxidation occurs. An example cites the oxygenated compounds, named above, as having been obtained from pentane by this method.

**What is Claimed**

Obtaining liquid oxygenated compounds by oxidizing a hydrocarbon with an oxidizing gas, by dissolving the gas in the liquid hydrocarbon, passing the mixture rapidly through a heated reaction zone, withdrawing and cooling the products.


# AUTOMATIC OVERLOAD MOTOR PROTECTION




***Protect Your Motors. Use Leland Motors equipped with Overload Thermal Release.***

Leland engineers have designed an overload thermal device for the protection of motors from burn out due to the severe overloads to which gasoline pump motors are invariably subjected.

Positive and accurate in action, it protects without annoyance. Severe instantaneous overloads do not affect it but when the motor approaches a burn out condition it operates automatically from the same heat source that threatens it. The motor cannot again be placed in service until the overload and threatened danger is removed.

This is just the kind of overload protection needed to save your motors.

Investigate this device. It will save you money. A sample motor with overload thermal release may be had by responsible users for trial. Write at once.

A. C. REPULSION-INDUCTION—
D. C. COMPOUND WOUND

A. C. POLYPHASE—
INTERCHANGEABLE FRAMES

**The Leland Electric Co.**
**Dayton · Ohio · U·S·A**

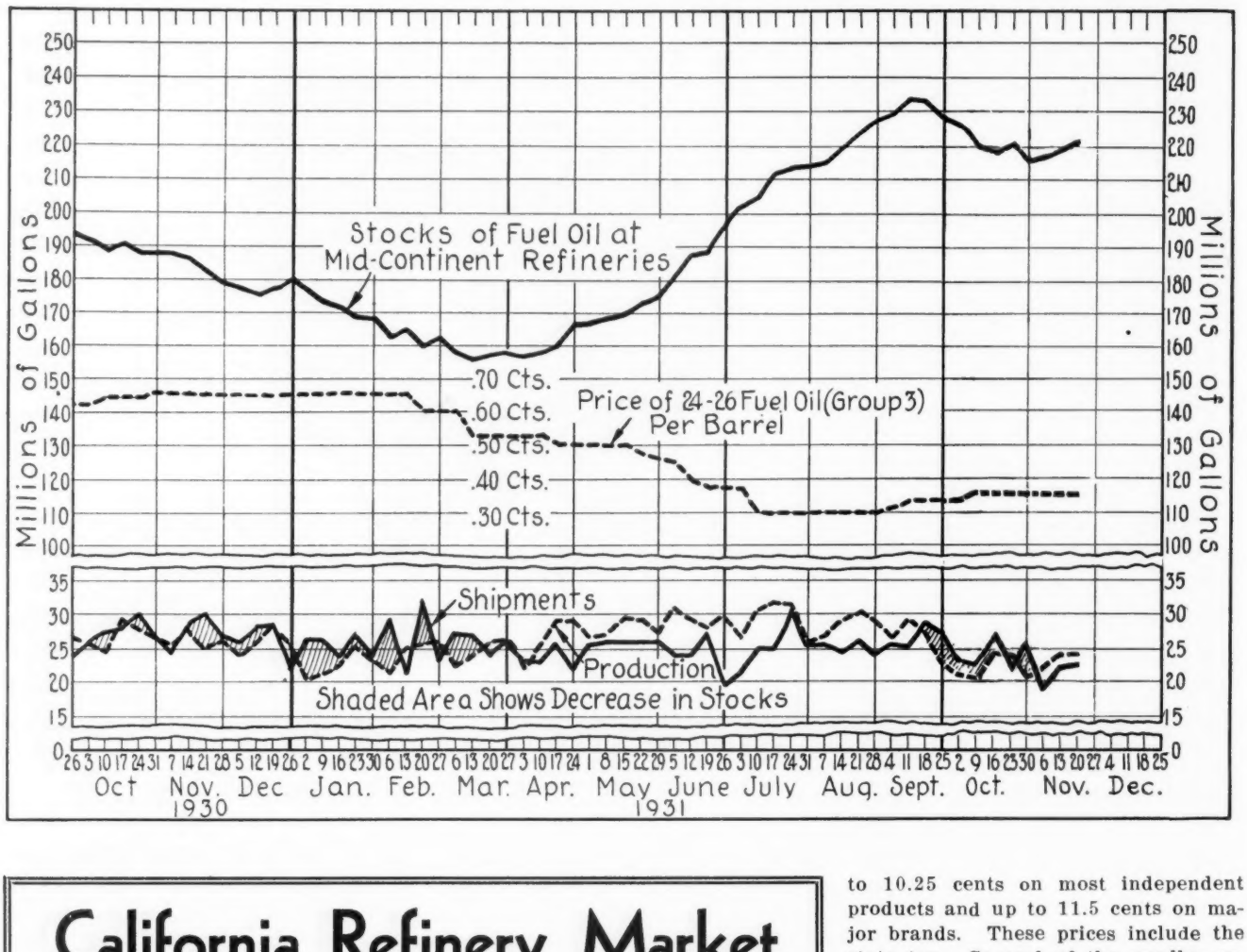
Canadian Address
Toronto

Cable Address
"Lelect Dayton"

**Leland**
**Vapor·Resisting**
**Motors**

## Barometer of Mid-Continent Refinery Market—Week Ending November 20

*Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News*




# California Refinery Market

## California Traders More Optimistic

LOS ANGELES, Nov. 21

A MUCH more optimistic tone prevailed in Pacific Coast domestic and export petroleum markets the past week as indications pointed to a possible advance in gasoline price structures to be followed by higher crude oil schedules.

Interest in the local export market was confined primarily to U. S. Motor gasoline of 65 octane number or better. Inquiry was made for two cargoes, with the buyer reported offering 4 cents, f.a.s. San Pedro harbor. Although no sales had been made at latest reports, traders thought the price was fair and would attract local suppliers.

Effective Nov. 17, Standard of California advanced its posted prices on 50,000-barrel cargoes of gasoline for intercoastal shipment, 0.5 cent for the three grades of minimum, 65, 67, and 69 octane numbers.

Although some 375,000 barrels of Kettleman Hills crude oil, 40 gravity, guaranteed 43 per cent gasoline, was reported available in San Pedro harbor for export at a price of $0.97 including a 1-cent commission, buyers were lacking. Several Japanese firms were still seeking crude oil in the local market, but it is understood sale of the oil mentioned above carries with it the stipulation that it shall not be moved to Japan.

Activity in other California export markets was exceedingly dull with few inquiries and no spot sales reported.

Domestically, quotations for tank car and tank-truck-and-trailer lots of gasoline were thought due for an advance. As the week ended, current quotations continued to range from 9 to 10.25 cents on most independent products and up to 11.5 cents on major brands. These prices include the state tax. Several of the smaller refiners indicated they would advance tank car quotations to 11 cents over the week end.

Retail conditions in southern California were not materially improved although independent stations in some districts had advanced the resale price to 14 cents from a previous low of 10.5 cents.

Spot movement of California gasoline into the adjoining states of Utah and Arizona was at a low ebb with quotations unchanged over a range of 5.75 to 6.25 cents. Higher quotations contemplated for instate shipment tended to raise the lower figure on this spread and traders did not expect to quote less than 6 cents on future deliveries.

Demand for heavy oils was fair with no change in price. Gas oil moved at $0.85 to $0.95, diesel at $0.80 to $0.90 and fuel oil at $0.45 to $0.55 per barrel.

Natural gasoline quotations were off 0.25 cent, ranging generally from 5.25 to 6 cents for spot movement.

## Pennsylvania Markets

### Burning Oils Active

CLEVELAND, Nov. 23.—Gasoline, kerosine and fuel oil continued to be the best sellers in the western Pennsylvania market during the past week. Trading of these commodities was reported brisk. The prevailing warm weather set back bright stock, steam refined and neutral oils. Other commodities generally were unchanged.

Gasoline advanced steadily during the past week. Buying continued good throughout the week. Prices advanced to a minimum of 4.5 cents on the 58-60 U. S. Motor.

All grades of kerosine advanced 0.125 to 0.25 cent. The 45 gravity was steady at a minimum of 3.875 cents. There was a 0.125-cent differential on the other grades.

Fuel oil continued unchanged at last week's prices. The lower field reported some fuel oil sold at slightly lower prices.

Neutral oil prices were off 0.5 to 1 cent. The 200 No. 3 color grade was fairly steady throughout the week but at the beginning of this week it eased off slightly. The 150 grade was offered freely at 16 cents.

Cylinder stock and bright stock did not present a very good picture. Prices were off 1 to 1.5 cents on bright stock and 1.25 cents on 600 s.r. filterable grade. There was little demand for either of these commodities.

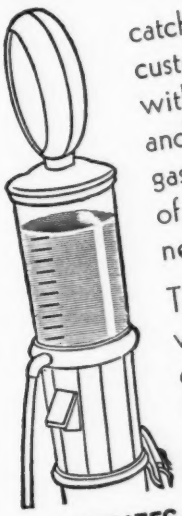
## British Oil Co's Adopt Co-operative Plan

WASHINGTON, Nov. 23.—A co-operative marketing plan has been perfected among British oil companies since suspension of the gold standard according to reports of the Department of Commerce. The move was taken to prevent prices rising since nearly all of the nation's oil must be imported.

Another recent important development reported by the British trade is a merger of the British marketing interests of the Anglo-Persian and Royal Dutch Shell groups of companies. The principal marketing subsidiary of the Anglo-Persian Oil Co., Limited is the British Petroleum Co., Ltd., and of the Royal Dutch Shell group, Shell Max Limited.

Details of the Merger are not yet available, but it is reported that these marketing companies, while continuing as separate entities will presumably be under the control of a new company which in turn will be jointly controlled by the parent groups. It is stated that the object of the merger is largely to effect marketing economies, and to prevent overlapping of services.


SCINTILLATING GASOLINE



catches the eye; therefore, draws customers. It is made by treatment with a DYKEM DYE. Easy to apply, and when used in good anti-knock gasoline, increases the sales appeal of your quality motor fuel. Cost is negligible.

Tell us your color preferences, and we shall forward samples and prices of the correct scintillating producing DYKEM DYE.

(*Scintillating—Sparkling*)

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*It's not too late for*

BURNHAM
*"Tested"*
PALE
*Profits*

Of course, Winter is under way, but if the brand you have isn't measuring up, there's still time for Burnham "Tested" Pales profits . . . Dealers and jobbers from the Atlantic to the Pacific are breaking profit records with Winter Light (S.A.E. 10) and Winter Medium (S.A.E. 20) . . . Start selling Burnham "Tested" Pales in the Winter Grades in your territory . . . Write on your letterhead for full sales promotion program information and for samples.

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Also Pennsylvania and Midcontinent Oils. Greases, too.

# Eastern Domestic Markets

## Foreign And Domestic Buyers More Active

Staff Special
NEW YORK, Nov. 21

TRADING in eastern tank car gasoline markets was more active the past week following the 0.5-cent increase in retail prices which the Standard Oil Co. of New Jersey made on Nov. 18. Kerosine was active. Mild weather continued to hamper trading of heating oils. The Jersey company's advance in retail gasoline prices had more or less been expected among the trade. Buyers, however, have seen prices headed downward for so long that they were a bit skeptical about improvement, or a raise in prices, until it became an actuality.

There was disappointment in some quarters over the amount of the retail price advance. Many of the trade had looked for at least a 1-cent increase. At the same time the majority of traders were much more optimistic over the outlook for the future than they have been for some time past.

The Baltimore tank car market and tank car markets to the south of this point of course benefited most from the Jersey company's advance. Jobber buying in the open market assumed much larger proportions following the advance and some sellers, after booking considerable business, advanced their tank car prices 0.25 cent a gallon. One refiner reported selling nearly 50 cars of U. S. Motor gasoline to open market buyers in the 24-hour period following Standard's announcement that it was raising retail prices. He said he had not done such a large volume of open market business in any one week previously this year.

Jobber buying also increased in the New York and Philadelphia markets but not proportionately with the Baltimore market. Improvement in the Philadelphia retail market was only temporary. The 1-cent advance in the service station price there on Nov. 9 was cancelled on Nov. 14 when the Atlantic Refining Co. followed other major companies in reducing prices.

U. S. Motor gasoline, below 65 octane, was fairly active in the New York market at 5.5 cents. Some refiners were asking 5.75 cents and reported making a few sales at this figure. U. S. Motor, 65 octane and above, enjoyed more activity than the lower grade. Sales were reported in about equal volume at 5.75 cents and 6 cents.

There was little improvement in the New York City retail market. Reports were current that some sellers were making tank wagon deliveries of gasoline at the same prices prevailing for tank car lots.

New England markets were generally steady. Orders from jobbers for shipments against contracts were coming in in good volume, refiners said. There was very little open market buying but at the same time no disposition was noted on the part of refiners to shade prices.

Kerosine continued active, particularly in the New England states. Prices were advanced 0.25 cent by some sellers in that territory. Prices were unchanged in other markets with water white at 5.5 cents in tank cars and 5.25 cents in barges.

There was no change in heating oil prices. Open market buying was at a standstill with demand for shipments against contracts reported by refiners as only fair. The weather remained unusually mild all along the northern part of the seaboard.

---

**Oil Burner Men Meet in Boston**

NEW YORK, Nov. 23.—Oil burning equipment will be seen in action among the exhibits of the dealer division of the American Oil Burner Association, Inc., when it meets in the Mechanics Bldg., Boston, the week of April 11.

The educational part of the program will include subjects of special interest to oil burner dealers. The social end offers opportunities to visit Bunker Hill, Faneuil Hall, Lexington Battlefield, Boston Harbor and other historic spots in and around Boston.

# Gulf Coast Markets

## Retail Advance Bolsters Tank Car Markets

Staff Special
NEW YORK, Nov. 21

BOTH foreign and domestic buyers displayed more interest in the Gulf cargo market in the week ended Nov. 21. There was active inquiry for bulk shipments of both light and heavy oils. Two cargoes of gasoline were sold for domestic shipment. Sellers' ideas of prices generally were higher.

An east coast consumer-buyer purchased two cargoes of minimum 65 octane U. S. Motor gasoline, one for December shipment and the other for February shipment. Details of the transactions were not made known generally but it was asserted by well informed observers that the price was around 4.75 cents a gallon f.o.b. the Gulf. The trade generally doubted if this price could be duplicated on additional business. One large supplier in fact reported he had turned down a firm bid of 4.75 cents for a cargo of 68 octane U. S. Motor.

At the end of the week, the majority of suppliers were quoting 4.5 to 4.75 cents for U. S. Motor below 65 octane number and 5 to 5.25 cents for 65 octane number and above, for domestic shipment. Suppliers also indicated they might advance prices from these levels in the near future.

Inquiries were in the market from two French buyers for approximately 125,000 barrels of 64-66, 375 end point gasoline for early January lifting. Firm offers were not forthcoming, however, and the New York trade believed the inquiries were merely exploratory inquiries. Most observers believed the business would go to Rumania. Russia was said to have withdrawn almost entirely from the European market and Rumanian refiners also were reported as being ready to withdraw from the market shortly.

American refiners advanced their quotations for gasoline for export 0.125 to 0.25 cent per gallon over the higher prices quoted last week. Although no business has been placed since prices started upward three weeks ago, it was believed in most quarters that there would be very little shading of prices when a wave of buying does hit the market. An American supplier was in the market for approximately 25,000 barrels of 64-66, 375 end point gasoline to fill out a cargo already sold. One refiner said the lowest he could quote for the business would be 5 cents and he would be able to supply only half of the quantity desired.

Scandinavian buyers were in the market for two cargoes of Grade C bunker oil for December lifting. The price of this oil was steady at $0.40 to $0.50 per barrel. For bunkering purposes, the oil was quoted at $0.45 per barrel.

Both foreign and domestic buyers were actively interested in contracting for foreign crude oil over 1932 but were not disposed to close on the basis of current asking prices. Sellers at the same time were not overly anxious to commit themselves and consequently were not urging buyers to close.

## On The Lazy Bench

**—Or Floating Power**

Young Jimmy was pushing his baby sister's perambulator down the street.

"Hey, Jimmy," called his buddy from across the street, "do you get paid for that?"

"Naw," replied Jimmy, disgustedly, "this is a free wheeling job."

*—Shell Globe*
*Shell Petroleum Corp.*

* * *

**Ain't It the Truth?**

Small girl (asked to define a gentleman): "A gentleman is a man you don't know very well."

*—The Gas Line*
*West Penn Oil Co.*

* * *

Remember, the Constitution only guarantees the pursuit of happiness. You have to catch up with it yourself.

* * *

**Logical**

Rastus: "Sambo, if de good Lawd had to take away either the sunshine or the moonlight which would you prefer?"

Sambo: "Why de sunlight of co'se. De sun shines in de daytime when it's light anyway, but the old moon she light up things when it's dark."

*—The Safe Driver*
*National Safety Council*

* * *

**Chivalry**

The genius of a certain Arkansas editor showed itself recently when he printed the following news item in the local columns of his paper.

"Miss Beulah Blank, a Batesville belle of twenty summers, is visiting her twin brother, age 32."

*—The Diamond*
*Mid-Continent Petroleum Corp.*

* * *

**Different**

First Prizefighter: "Say Bo, when I hit a guy he remembers it!"

Second Prizefighter: "Well, get this—when I hit 'im, he don't."

*—The Diamond*
*Mid-Continent Petroleum Corp.*

* * *

**Boy, Page La Salle**

First Salesman: "I made some wonderful contacts today."

Second Salesman: "I didn't make any sales, either.

*—Shell Globe*
*Shell Petroleum Corp.*

* * *

**Naming the Mine**

When it came to naming the new mine the prospector's wife said: "Will you name it after me, dearie?"

"Yes," said the prospector, "I will name it in your honor."

And from that day to this one of the richest gold mines in the Black Hills of South Dakota has been known as The Holy Terror.

*—The Safe Worker*
*National Safety Council*

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*You Can't Beat This Pair!*

WHITE ROSE GASOLINE

*Costs No More Than Regular Gasoline*

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*Paraffine Base* *Wear Proof*

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THE NATIONAL REFINING COMPANY, *Cleveland, Ohio*

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## for your station patrons and PROFITS for you

The stations getting the gallonage today are providing those special services which patrons recognize and appreciate. Modern, clean washrooms with the sanitary A. P. W. Onliwon Towel and Toilet Tissue Service.

Motorists prefer A. P. W. Onliwon Paper Towels because they are absolutely safe—can be used but once. A real protection against the many communicable diseases and infections so often found in public washrooms.

A. P. W. Onliwon Toilet Tissue is sanitary and safe because it is protected from all contamination by Onliwon Cabinets. Roll toilet tissues are exposed to dust, dirt and handling immediately they are placed on the wall.

Write today for a generous sample supply of Onliwon Towels and Tissue for your own testing purposes. And you will learn why hundreds of service station owners pick Onliwon.

A.P.W.

Trade-Mark Registered in U. S. Patent Office

*Pioneers for Cleanliness Since 1877*

A. P. W. Paper Co., Albany, N. Y. NPN-11-31

Please send generous sample supply of A. P. W. Towels and Tissue for testing.

Name.....

Address.....

City..... State.....

# Complete Seaboard Market

***Export Markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the whole year***

## Eastern Domestic Market

**(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of sales and quotations. Prices shown below do not include inspection tax levied in Florida and South Carolina.)**

| | Prices Nov. 23 | Prices Nov. 16 | Prices Nov. 9 |
|---|---|---|---|
| **U. S. MOTOR GASOLINE, Below 65 Octane Number** | | | |
| New York harbor | 5.50 – 5.75 | 5.50 | 5.50 |
| Boston | 6.00 | 6.00 | 6.00 |
| Providence | 6.00 | 6.00 | 6.00 |
| Philadelphia District | 5.50 – 5.75 | 5.50 | 5.50 |
| Baltimore District | 5.50 – 5.75 | 5.50 | 5.50 |
| **U. S. MOTOR GASOLINE, 65 Octane Number and Above** | | | |
| New York harbor | 5.75 – 6.00 | 5.75 – 6.00 | 5.75 – 6.00 |
| Portland district | 6.50 | 6.50 | 6.50 |
| Boston district | 6.25 | 6.25 | 6.25 |
| Providence district | 6.25 | 6.25 | 6.25 |
| Philadelphia district | 5.75 – 6.00 | 5.75 – 6.00 | 5.75 – 6.00 |
| Baltimore district | 5.75 – 6.00 | 5.75 – 6.00 | 5.75 – 6.00 |
| Norfolk district | 6.00 | 6.00 | 6.00 |
| Charleston district | 6.00 | 6.00 | 6.00 |
| Savannah district | 6.00 | 6.00 | 6.00 |
| Jacksonville district | 6.00 | 6.00 | 6.00 |
| **‡DOMESTIC AVIATION GASOLINE** | | | |
| New York harbor | 9.00 –10.00 | 9.00 –10.00 | 9.50 –12.00 |
| Philadelphia | 9.00 –10.00 | 9.00 –10.00 | 9.50 –12.00 |
| Baltimore | 9.00 –10.00 | 9.00 –10.00 | 11.00 –12.00 |
| Boston | 9.50 –11.00 | 9.50 –11.00 | 11.50 –13.00 |
| **WATER WHITE KEROSINE** | | | |
| New York harbor | 5.50 | 5.50 | 5.50 |
| Philadelphia district | 5.50 | 5.50 | 5.50 |
| Baltimore district | 5.50 | 5.00 – 5.50 | 5.00 – 5.50 |
| **GAS OIL: 28-34 Gravity** | | | |
| New York harbor | 3.50 | 3.50 | 3.50 |
| Boston district | 3.75 | 3.75 | 3.75 |
| **FURNACE OIL: 36-40 Gravity** | | | |
| New York harbor | 4.50 | 4.50 | 4.50 |
| Boston district | 4.50 | 4.50 | 4.50 |
| **GRADE C BUNKER OIL (Lighterage 5c per bbl. additional)** | | | |
| New York harbor | $0.60 | $0.60 | $0.60 |
| Boston district | $0.60 | $0.60 | $0.60 |
| **DIESEL OIL** | | | |
| New York harbor | $1.30 | $1.30 | $1.30 |

‡Prices are based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167°F. and not less than 122°F.; 50% recovery at 221°; 90% at 311°; 96% at 347° end point 374°F. Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

## New York Export Market

**(Lubricating oils are per gal. in bbls. F.a.s. New York)**

| | Nov. 23 | Nov. 16 | Nov. 9 |
|---|---|---|---|
| **CYLINDER OILS (Pennsylvania Products)** | | | |
| Bright stock, No. 8 color | 29.50 –30.00 | 29.50 –30.00 | 29.50 –31.00 |
| Bright stock, No. 6½ color diluted | 28.50 –29.00 | 28.50 –29.00 | 29.00 –30.00 |
| 600 D filtered | 27.50 –28.00 | 27.50 –28.00 | 28.00 –29.00 |
| 600 Warren E filtered | 23.00 –24.00 | 23.00 –24.00 | 23.00 –24.00 |
| 600 stm. refd. unfiltered | 19.50 –20.00 | 19.50 –20.00 | 20.00 –21.00 |
| 650 stm. refd. unfiltered | 22.50 –23.00 | 22.50 –23.00 | 22.00 –23.00 |
| 600 flash steam refined | 23.50 –24.00 | 23.50 –24.00 | 24.00 –25.00 |
| 630 flash, steam refined | 27.00 –28.00 | 27.00 –28.00 | 28.00 –29.00 |
| **RED PARAFFIN OILS (Vis. 100°)** | | | |
| 300 vis. No. 6½ color | 15.00 –17.00 | 15.00 –17.00 | 15.00 –17.00 |
| 250 vis. No. 6 color | 15.00 –16.00 | 15.00 –16.00 | 15.00 –16.00 |
| 200 vis. No. 6 color | 13.00 –14.00 | 13.00 –14.00 | 13.00 –14.00 |
| **PALE PARAFFIN OILS (Vis. 100°)** | | | |
| 230 vis. No. 3¾ color | 16.50 –17.00 | 16.50 –17.00 | 16.50 –17.00 |
| 180 vis. No. 3¼ color | 15.00 –16.00 | 15.00 –16.00 | 15.00 –16.00 |
| 100 vis. No. 2¼ color | 10.50 –11.50 | 10.50 –11.50 | 10.50 –11.50 |

## Wax Market

**(Prices in cents per pound, f. a. s. carload lots. Tests made by A.S.T.M. method with melting points converted into A.M.P. by adding 3° F.)**

| NEW YORK | Nov. 23 | Nov. 16 | Nov. 9 |
|---|---|---|---|
| 124-126 Yellow crude scale | 1.90 – 2.00 | 1.90 – 2.00 | 1.90 – 1.95 |
| 122-124 White crude scale | 2.00 – 2.125 | 2.00 – 2.125 | 1.95 – 2.00 |
| 124-126 White crude scale | 2.00 – 2.125 | 2.00 – 2.125 | 1.95 – 2.00 |
| 123-125 Fully refined | 2.875– 3.00 | 2.875– 3.00 | 2.875– 3.00 |
| 125-127 Fully refined | 2.875– 3.00 | 2.875– 3.00 | 2.90 – 3.00 |
| 128-130 Fully refined | 3.00 – 3.125 | 3.00 – 3.125 | 3.00 – 3.125 |
| 130-132 Fully refined | 3.25 – 3.50 | 3.25 – 3.50 | 3.25 – 3.50 |
| 133-135 Fully refined | 4.125– 4.25 | 4.125– 4.25 | 4.125– 4.25 |
| 135-137 Fully refined | 4.375– 4.50 | 4.375– 4.50 | 4.375– 4.50 |
| **NEW ORLEANS** | | | |
| 124-126 Yellow crude scale | 1.90 – 2.00 | 1.90 – 2.00 | 1.90 – 1.95 |
| 122-124 White crude scale | 1.95 – 2.00 | 1.95 – 2.00 | 1.95 – 2.00 |
| 124-126 White crude scale | 1.95 – 2.00 | 1.95 – 2.00 | 1.95 – 2.00 |
| 123-125 Fully refined | 2.875– 3.00 | 2.875– 3.00 | 2.875– 3.00 |
| 125-127 Fully refined | 2.875– 3.00 | 2.875– 3.00 | 2.90 – 3.00 |
| 128-130 Fully refined | 3.00 – 3.125 | 3.00 – 3.125 | 3.00 – 3.125 |
| 130-132 Fully refined | 3.25 – 3.50 | 3.25 – 3.50 | 3.25 – 3.50 |
| 133-135 Fully refined | 4.125– 4.25 | 4.125– 4.25 | 4.125– 4.25 |

## Gulf Coast Bulk Market

**(Prices are f. o. b. Gulf oil terminals representing sellers' opinions covering bulk shipments of 20,000 barrels or more, for export and / or coastwise shipment unless otherwise noted.)**

| GASOLINE | Prices Nov. 23 | Prices Nov. 16 | Prices Nov. 9 |
|---|---|---|---|
| **U. S. MOTOR GASOLINE (Domestic shipment)** | | | |
| Below 65 octane number | 4.50 – 4.75 | 4.25 – 4.50 | 4.25 – 4.50 |
| 65 octane number and above | 5.00 – 5.25 | 4.75 – 5.00 | 4.375– 4.75 |
| **Export Shipment** | | | |
| U.S. Motor gasoline | 4.50 – 4.75 | 4.25 – 4.50 | 4.125 |
| 60-62, 400 e.p. gasoline | 4.625– 4.875 | 4.375– 4.625 | 4.25 |
| 61-63, 390 e.p. gasoline | 4.75 – 5.00 | 4.50 – 4.75 | 4.375 |
| 64-66, 375 e.p. gasoline | 5.00 – 5.25 | 4.75 – 5.00 | 4.50 |
| U. S. Motor, (cases cargoes) | $1.50 | $1.50 | $1.50 |
| 64-66, cases (cargoes) | $1.60 | $1.60 | $1.60 |
| **KEROSINE** | | | |
| 44 water white | 4.00 – 4.25 | 4.00 – 4.25 | 4.00 – 4.25 |
| 41-43 prime white | 3.75 – 4.00 | 3.75 – 4.00 | 3.75 – 4.00 |
| Water white, cases (cargoes) | $1.40 | $1.40 | $1.40 |
| Prime white, cases (cargoes) | $1.30 | $1.30 | $1.30 |
| **GAS & BUNKER OILS** | | | |
| *26-30 translucent gas oil | 2.25 – 2.50 | 2.25 – 2.50 | 2.25 – 2.50 |
| *30 plus translucent gas oil | 2.50 – 2.75 | 2.50 – 2.75 | 2.50 – 2.75 |
| Grade C bunker oil, for ships' bunkers, per bbl. | $0.45 | $0.45 | $0.45 |
| Grade C bunker oil, per bbl. in cargoes | $0.40 –$0.45 | $0.40 –$0.45 | $0.40 –$0.45 |

*Less than ½ of 1% sulphur.

| **MEXICAN CRUDE AND BUNKER OILS (f. o. b. Steamer, Tampico)** | | | |
|---|---|---|---|
| Heavy Panuco crude taxes to be paid, per bbl. | $0.48 –$0.50 | $0.48 –$0.50 | $0.45 |
| Grade C bunker oil for bunkering, taxes paid, per bbl. | $0.55 | $0.55 | $0.55 |

| **SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F. cold test 0 Tanker, f. o. b. Gulf oil terminals.)** | | | |
|---|---|---|---|
| 100 vis. No. 2 unfiltered pale | 4.375– 4.50 | 4.375– 4.50 | 4.375– 4.50 |
| 200 vis. No. 3 unfiltered pale | 6.00 – 6.50 | 6.00 – 6.50 | 6.00 – 6.50 |
| 300 vis. No. 3 unfiltered pale | 7.625– 8.00 | 7.625– 8.00 | 7.625– 8.00 |
| 500 vis. No. 3½ unfiltered pale | 8.25 – 8.75 | 8.25 – 8.75 | 8.25 – 8.75 |
| 750 vis. No. 4 unfiltered pale | 9.25 – 9.75 | 9.25 – 9.75 | 9.25 – 9.75 |
| 1200 vis. No. 4 unfiltered pale | 12.00 –12.50 | 12.00 –12.50 | 12.00 –12.50 |
| 200 vis. No. 5-6 red oil | 5.25 – 5.75 | 5.25 – 5.75 | 5.25 – 5.75 |
| 300 vis. No. 5-6 red oil | 6.25 – 6.75 | 6.25 – 6.75 | 6.25 – 6.75 |
| 500 vis. No. 5-6 red oil | 7.25 – 7.75 | 7.25 – 7.75 | 7.25 – 7.75 |
| 750 vis. No. 5-6 red oil | 8.25 – 8.75 | 8.25 – 8.75 | 8.25 – 8.75 |
| 1200 vis. No. 5-6 red oil | 13.25 –13.50 | 13.25 –13.50 | 13.25 –13.50 |

## Pacific Export Market

**(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)**

| | Nov. 23 | Nov. 16 | Nov. 9 |
|---|---|---|---|
| Gasoline, U. S. Motor, 53-55 Gravity | 3.875– 4.50 | 3.875– 4.50 | 3.50 – 4.25 |
| Gasoline, U. S. Motor-blends and special cuts | 4.125– 4.75 | 4.125– 4.75 | 3.75 – 4.50 |
| Gasoline, 400 e.p. blend | 4.375– 5.00 | 4.375– 5.00 | 4.00 – 4.75 |
| Gas oil, 30-34 per bbl. | $0.78 –$0.90 | $0.78 –$0.90 | $0.78 –$0.90 |
| Diesel Oil, 27 plus, per bbl. | $0.80 –$0.90 | $0.80 –$0.90 | $0.80 –$0.90 |
| Bunker oil, 14-18 per bbl. | $0.55 –$0.70 | $0.55 –$0.70 | $0.55 –$0.70 |
| Fuel oil, 14-18 per bbl. | $0.55 –$0.70 | $0.55 –$0.70 | $0.55 –$0.70 |
| Kerosine, 38-40 w.w., 125-150 flash, per gal. | 4.25 – 4.75 | 4.25 – 4.75 | 4.25 – 4.75 |
| **Cased Goods** | | | |
| Gasoline, U. S. Motor | $1.35 –$1.45 | $1.35 –$1.45 | $1.35 –$1.45 |
| Gasoline, 400 e.p. blend | $1.50 –$1.60 | $1.50 –$1.60 | $1.50 –$1.60 |
| Kerosine, 38-40 w.w., 125-150 flash | $1.25 –$1.35 | $1.25 –$1.35 | $1.25 –$1.35 |
| Kerosine, prime white | $1.05 –$1.15 | $1.05 –$1.15 | $1.05 –$1.15 |

## Tanker Rates

**(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrel.)**

| | Nov. 23 | |
|---|---|---|
| | Crude &/or Fuel | Refined Oil &/or Spirits |
| Calif. to U. K. or Continental ports* | †15 | ††15 |
| Gulf to U. K. or Continental ports* | 9 | 9 |
| North Atlantic to U. K. or Continental ports* | 7/6 | 7/6 |
| Calif. to North Atlantic ports (not E. of N. Y.) | $0.45-$0.47 | $0.45-$0.47 |
| Gulf to North Atlantic ports (not E. of N. Y.)** | 14-15 | 15 |

*Continental ports in the range between Bordeaux and Hamburg, both inclusive. **Venezuela loading same rate, for Tampico 2c to 3c per bbl. additional. †Last paid 12/6; owners ask 15. ††Last paid 11/6; owners ask 15.

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**Interested in**.....

**Size**..... ..... **Truck**.....

**Other Equipment**.....

**Name**.....

**Address**.....

# Tank Wagon, Service Station Markets for Gasoline and Kerosine

***(OIL PRICE HANDBOOK has t.w. and s.s. markets for a whole year, arranged for quick reference)***

These Prices in Effect November 23, 1931, as Posted by Principal Marketing Companies

## Latest Changes in Tank Wagon Prices

### Gasoline

**S. O. New Jersey**—Gasoline up ½c generally thru territory, **Nov. 18.**

**Atlantic Refining**—Correction: S.s. prices for Pittsburgh and Philadelphia were published in error in the Nov. 18 issue. Correct s.s. price for Pittsburgh was 15c, and for Philadelphia 13c, the latter effective **Nov. 14.**

T.w. up 4c, s.s. up 2c, Brunswick, both to 19c, including 6c tax, **Nov. 16.**

T.w. up 1c, s.s. up 2c, Jacksonville, to 20c and 21c respectively, including 7c tax, **Nov. 16.**

T.w. and s.s. up ½c generally thru New Jersey, Maryland, Virginia and North Carolina, **Nov. 18.**

T.w. and s.s. up 1c thru Eastern Pennsylvania except Philadelphia s.s. unchanged, **Nov. 23.** Advance includes Allentown and Scranton.

**S. O. Ohio**—T.w. and s.s. up 1c, thru Summit county, both to 17c, including 4c tax, **Nov. 20.**

S.s. only up 1c, thru Ashtabula county, to 18c, including 4c tax, **Nov. 20.**

S.s. only up 1c thru Lucas and Henry counties, both to 18c, including 4c tax, **Nov. 21.**

**S. O. Kentucky**—Kyso Green cut ½c, Montgomery, to 18c t.w., 18c s.s., including 7c tax, **Nov. 13.**

In the general 1c advance, **Nov. 16,** thru territory, these points were exceptions: Birmingham, Crown and Kyso Green gasolines, t.w. and s.s. up 2.5c; Montgomery, Kyso Green up 1.5c; Jacksonville Crown t.w. up 1c, s.s. up 2c; Miami, Crown up 2c; Tampa, Crown t.w. up 1c, s.s. up 2c; Savannah, Crown up 2c; Atlanta, Crown and Kyso Green up 1.5c; Mobile, Vicksburg and Jackson unchanged.

**S. O. Indiana**—T.w. and s.s. up ½c, St. Louis, both to 13.9c, including 2.5c tax, **Nov. 18.**

**S. O. Louisiana**—Blue-Gas s.s. cut ½c, Alexandria, to 13.5c, including 6c tax, **Nov. 21.**

T.w. and s.s. Standard gasoline up ½c, Bristol, 18.5c and 19.5c respectively, including 6c tax, **Nov. 21.**

S.s. Blue-Gas cut 2c, Chattanooga, to 15c, including 6c tax, **Nov. 21.**

**Magnolia Petroleum**—Maximum Mileage: T.w. and s.s. up 1c generally thru Texas, **Nov. 7.**

T.w. up 1c, s.s. up ½c, Fort Smith, to 16.5c and 17c respectively, including 5c tax, **Nov. 5.**

T.w. up 1c, s.s. cut ½c, Little Rock, to 17.5c and 17c respectively, including 6c tax, **Nov. 5.**

T.w. and s.s. up 1c, Texarkana, to 13c and 15c respectively, including 4c tax, **Nov. 7.**

T.w. and s.s. cut 3c, Muskogee, to 10c and 12c respectively, including 5c tax, **Nov. 10.**

Third Grade t.w. and s.s. cut 1c, Muskogee, both to 11c including 5c tax, **Oct. 14.**

**Continental Oil**—S.s. only cut 1c, Twin Falls, to 20c including 5c tax, **Nov. 6.**

**S. O. California**—Retail price only up 1c, Phoenix, to 17c including 5c tax, **Nov. 16.**

### Aviation Gasoline

**S. O. New Jersey**—T.w. cut 3/10c, Baltimore, to 18.9c, including 4c tax, **Nov. 11.**

### Kerosine

**Atlantic Refining** — Kerosine t.w. cut 2c, Jacksonville, to 10c, **Nov. 19.**

**S. O. Kentucky**—Kerosine t.w. cut 3.5c, Vicksburg, to 8c, **Nov. 11.**

Kerosine t.w. up 1c generally thru Kentucky except Lexington unchanged, up 1c, Savannah, **Nov. 16.**

**S. O. Nebraska** — Correction: Date of 1.25c cut at Scottsbluff to 9c was published in Nov. 11 issue, page 100, as effective Nov. 7. Correct date of change was **Sept. 17.** Same issue, same page, date of 3.25c cut at McCook to 7.5c was published as effective Nov. 7. Correct date of change was **Sept. 12.**

**Magnolia Petroleum** — Kerosine t.w. cut 2c, Muskogee, to 6c, **Nov. 6.**

## S. O. NEW JERSEY TERRITORY

| | Gasoline T.W. | Tax | Total T.W. | S.S. | Oil T.W. |
|---|---|---|---|---|---|
| Atlantic City, N. J. | 12.2 | 3 | 15.2 | 16.2 | 11.5 |
| Newark, N. J. | 11.2 | 3 | 14.2 | 15.2 | 10.5 |
| Annapolis, Md. | 11.7 | 4 | 15.7 | 16.7 | 11 |
| Baltimore, Md. | 10.9 | 4 | 14.9 | 15.9 | 8.5 |
| Cumberland, Md. | 12.7 | 4 | 16.7 | 17.7 | 12 |
| Washington, D. C. | 11.4 | 2 | 13.4 | 14.4 | 10.7 |
| Danville, Va. | 12.5 | 5 | 17.5 | 18.5 | 11.8 |
| Norfolk, Va. | 11 | 5 | 16 | 17 | 10.3 |
| Petersburg, Va. | 12 | 5 | 17 | 18 | 11.3 |
| Richmond, Va. | 11.4 | 5 | 16.4 | 15.4 | 10.7 |
| Roanoke, Va. | 12.7 | 5 | 17.7 | 17.7 | 12 |
| Charleston, W. Va. | 12.2 | 4 | 16.2 | 17.2 | 11.5 |
| Keyser, W. Va. | 12.8 | 4 | 16.8 | 17.8 | 12.1 |
| Parkersburg, W. Va. | 10.9 | 4 | 14.9 | 15.9 | 10.2 |
| Wheeling, W. Va. | 12.1 | 4 | 16.1 | 17.1 | 11.4 |
| Charlotte, N. C. | 11 | 6 | 17 | 18 | 10.7 |
| Hickory, N. C. | 13.3 | 6 | 19.3 | 20.3 | 12.6 |
| Mt. Airy, N. C. | 13.2 | 6 | 19.2 | 20.2 | 12.5 |
| Raleigh, N. C. | 12.9 | 6 | 18.9 | 19.9 | 12.2 |
| Salisbury, N. C. | 13.2 | 6 | 19.2 | 20.2 | 12.5 |
| Charleston, S. C. | 11 | 6 | 17 | 18 | 10.3 |
| Columbia, S. C. | 12.9 | 6 | 18.9 | 19.9 | 12.2 |
| Spartanburg, S. C. | 13.2 | 6 | 19.2 | 20.2 | 12.5 |

**Discounts:** gasoline, 2c per gallon discount off retail t. w. price to dealers thru S. O. New Jersey territory, except Maryland, New Jersey and Washington, D. C. where discount is 3c.

## S. O. NEW YORK

| | | | | | |
|---|---|---|---|---|---|
| Greater New York City: Boroughs of Manhattan, Bronx, Queens & Kings | 12.3 | 2 | 14.3 | 16.3 | 9 |
| Borough of Richmond | 12.7 | 2 | 14.7 | 16.7 | 9 |
| Albany, N. Y. | 11.6 | 2 | 13.6 | 14.6 | 10.5 |
| Buffalo, N. Y. | 11 | 2 | 13 | 13 | 10 |
| Rochester, N. Y. | 12 | 2 | 14 | 14 | 10 |
| Syracuse, N. Y. | 10.8 | 2 | 12.8 | 13.8 | 9 |
| Boston, Mass. | 10.5 | 3 | 13.5 | 14.5 | 10 |
| Augusta, Me. | 12.8 | 4 | 16.8 | 17.8 | 10.5 |
| Manchester, N. H. | 10 | 4 | 14 | 15 | 10 |
| Burlington, Vt. | 13.3 | 4 | 17.3 | 17.3 | 9 |
| New Haven, Conn. | 11.5 | 2 | 13.5 | 14.5 | 9 |
| Providence, R. I. | 9.5 | 2 | 11.5 | 12.5 | 10 |

**Discounts:** on gasoline 2c per gal. off posted t.w. price to dealers, thru territory, except 3c to dealers in New York City.

## ATLANTIC REFINING

| | | | | | |
|---|---|---|---|---|---|
| Pittsburgh, Pa. | 11 | 3 | 14 | 15 | 11 |
| Philadelphia, Pa. | 11 | 3 | 14 | 13 | 11 |
| Allentown, Pa. | 11 | 3 | 14 | 15 | 11 |
| Erie, Pa. | 11 | 3 | 14 | 15 | 11 |
| Scranton, Pa. | 11 | 3 | 14 | 15 | 11 |
| Altoona, Pa. | 11 | 3 | 14 | 15 | 11 |
| Dover, Del. | 11 | 3 | 14 | 15 | 11 |
| Wilmington, Del. | 11 | 3 | 14 | 15 | 11 |
| Boston, Mass. | 10.5 | 3 | 13.5 | 14.5 | 10 |
| Springfield, Mass. | 10 | 3 | 13 | 14 | 10 |
| Worcester, Mass. | 11.3 | 3 | 14.3 | 15.3 | 10 |
| Fall River, Mass. | 9 | 3 | 12 | 13 | 10 |
| Providence, R. I. | 9.5 | 2 | 11.5 | 12.5 | 10 |
| Hartford, Conn. | 11 | 2 | 13 | 14 | 10 |
| New Haven, Conn. | 12.6 | 2 | 14.6 | 15.6 | 10 |
| Atlantic City, N. J. | 12.2 | 3 | 15.2 | 16.2 | 11.5 |
| Camden, N. J. | 11.3 | 3 | 14.3 | 15.3 | 10.6 |
| Trenton, N. J. | 11.7 | 3 | 14.7 | 15.7 | 11 |
| Annapolis, Md. | 11.7 | 4 | 15.7 | 16.7 | 11 |
| Baltimore, Md. | 10.9 | 4 | 14.9 | 15.9 | 8.5 |
| Hagerstown, Md. | 11 | 4 | 15 | 15 | 11.7 |
| Richmond, Va. | 11.4 | 5 | 16.4 | 17.4 | 10.7 |
| Wilmington, N. C. | 11.1 | 6 | 17.1 | 18.1 | 10.4 |
| Brunswick, Ga. | 13 | 6 | 19 | 19 | *13 |
| Jacksonville, Fla. | 13 | 7 | 20 | 21 | 10 |

**Discounts:** on gasoline to dealers: "split dealers," 2c off posted t.w. price; to 100% dealers, 2.5c of t.w.; to authorized dealers (under lease 1c per gal.), 2.5c off posted s.s. price.

Commercial accounts, under contract for one year, are sold at a discount off the posted prices, with due consideration to competition.

*Georgia kerosine prices include 1c state tax.

## S. O. OHIO

**Sohio X-70**

| | | | | | |
|---|---|---|---|---|---|
| Ohio statewide | 13 | 4 | 17 | 18 | 13 |
| Clark, Defiance, Fulton, Greene, Hancock, Marion, Miami, Preble, Summit, Williams and Wyandot counties | 13 | 4 | 17 | 17 | 13 |
| Butler, Montgomery & Pickaway counties | 12 | 4 | 16 | 16 | 13 |

Above prices include these inspection fees on both gasoline and kerosine, per gallon, figured on basis of 50 gallons per barrel:

Alabama, 1/40c on gasoline, 1/2c on kerosine; Arkansas, 1/5c per gal. in a single barrel, 1/20c per gal. in bulk; Florida, 1/8c; Illinois, 3/100c; Indiana, 1/2c per gal. in a single barrel; 3/10c per gal. in lots of 2 to 10 bbls., 1/5c for 10 to 50 bbls., 2/25c for over 50 bbls.; Kansas, 1/50c, (3/50c can be charged to meet inspection department expenses); Louisiana, 1/32c; Minnesota, 2/25c; Nebraska, 3/50c; North Carolina, 1/4c; North Dakota, 1/20c; Oklahoma, 2/25c per gal. in lots of more than 50 bbls., 1.5c in lots less than 50 bbls.; South Carolina, 1/8c; South Dakota, 1/10c; Tennessee, 1/5c per gal. on gasoline, approximately 5/8c on kerosine; and Wisconsin, 1/25c.

Kerosine inspection fees only: Iowa, 2/25c; Michigan, 4/5c per gal. for first 2 bbls.; 3.5c for next 3; 2/5c for next 5; 3/10c for next 15; and 1.5c per gal. in lots over 25 bbls.

# Tank Wagon, Service Station Markets for Gasoline and Kerosine

## These Prices in Effect November 23, 1931, as Posted by Principal Marketing Companies

### Hi-So Green (Third Grade)

Sells generally 2c under s.s. price of Sohio X-70 To resellers, discount is 1½c below Hi-So Green s.s. price. Not sold to consumers.

| | | |
|---|---|---|
| Ohio statewide | 16 | 13 |

**Discounts:** on Sohio X-70 gasoline, to dealers and commercial consumers generally thru Ohio, 2c per gal. off t.w. price except in counties where prices are below statewide schedule discount is generally 3c.

## S. O. KENTUCKY

### Crown Gasoline

| | Gasoline Total T.W. | Tax | T.W. | S.S. | Oil T.W |
|---|---|---|---|---|---|
| Lexington, Ky. | 12 | 5 | 17 | 18 | 12 |
| Louisville, Ky. | 11 | 5 | 16 | 17 | 11 |
| Paducah, Ky. | 13 | 5 | 18 | 19 | 12 |
| Covington, Ky. | 13 | 5 | 18 | 19 | 12 |
| Jackson, Miss. | 10.5 | 5.5 | 16 | 16 | 11.5 |
| Vicksburg, Miss. | 9.5 | 5.5 | 15 | 15 | 8 |
| Birmingham, Ala. | 12 | ‡‡6 | 18 | 18 | 13 |
| Mobile, Ala. | 9 | ‡8.5 | 17.5 | 17.5 | 10 |
| Montgomery, Ala. | 14 | *7 | 21 | 21 | 13.5 |
| Macon, Ga. | 14 | 6 | 20 | 20 | †12 |
| Atlanta, Ga. | 13 | 6 | 19 | 19 | 12.5 |
| Augusta, Ga. | 14 | 6 | 20 | 21 | †14 |
| Savannah, Ga. | 13 | 6 | 19 | 19 | †13 |
| Jacksonville, Fla. | 13 | 7 | 20 | 21 | 12 |
| Miami, Fla. | 14 | 7 | 21 | 22 | 13 |
| Tampa, Fla. | 13 | 7 | 20 | 21 | 12 |
| Pensacola, Fla. | 13 | **8 | 21 | 22 | 13 |

### Kyso Green (Third Grade)

| | | | | | Oil |
|---|---|---|---|---|---|
| Lexington, Ky. | 10 | 5 | 15 | 15 | 12 |
| Louisville, Ky. | 9 | 5 | 14 | 14 | 11 |
| Paducah, Ky. | 10 | 5 | 15 | 15 | 12 |
| Jackson, Miss. | 9 | 5.5 | 14.5 | 14.5 | 11.5 |
| Vicksburg, Miss. | 8 | 5.5 | 13.5 | 13.5 | 8 |
| Birmingham, Ala. | 10.5 | ‡‡6 | 16.5 | 16.5 | 13 |
| Mobile, Ala. | 7.5 | ‡8.5 | 16 | 16 | 10 |
| Montgomery, Ala. | 12.5 | *7 | 19.5 | 19.5 | 13.5 |
| Atlanta, Ga. | 11.5 | 6 | 17.5 | 17.5 | *12.5 |
| Macon, Ga. | 12.5 | 6 | 18.5 | 18.5 | †12 |

**Discounts:** on gasoline, 2c per gal. off t.w. price to dealers thru S. O. Kentucky territory.

At Atlanta, 1c special temporary discount on gasoline in Addition to 2c general discount, effective Oct. 6; also 3c discount off t.w. price of kerosine to dealers.

*Montgomery gasoline tax includes 5c state tax, 1c county tax, and 1c local privilege tax. Kerosine price includes ½c tax.

†Georgia kerosine prices include 1c state tax.

**Pensacola gasoline tax includes 7c state tax and 1c city tax.

‡Mobile gasoline tax includes 5c state tax, 1c city tax and 2.5c Mobile County tax.

‡‡Birmingham gasoline tax includes 5c state tax and 1c city tax.

## S. O. INDIANA

### Standard Red Crown Gasoline

| | | | | | |
|---|---|---|---|---|---|
| Chicago, Ill. | 12 | 3 | 15 | 15 | 9 |
| Decatur, Ill. | 12.4 | 3 | 15.4 | 15.4 | 9 |
| E. St. Louis, Ill. | 11.7 | 3 | 14.7 | 12.7 | 8.2 |
| Joliet, Ill. | 12.4 | 3 | 15.4 | 15.4 | 9 |
| Peoria, Ill. | 12.4 | 3 | 15.4 | 15.4 | 9 |
| Quincy, Ill. | 12.2 | 3 | 15.2 | 15.2 | 8.8 |
| Springfield, Ill. | 12.4 | 3 | 15.4 | 15.4 | 9 |
| Indianapolis, Ind. | 12.3 | 4 | 16.3 | 16.3 | 10 1 |
| Evansville, Ind. | 12.1 | 4 | 16.1 | 16.1 | 9.9 |
| South Bend, Ind. | 12.4 | 4 | 16.4 | 16.4 | 8 |
| Detroit, Mich. | 11.5 | 3 | 14.5 | 14.5 | 10.7 |
| Grand Rapids, Mich. | 12.7 | 3 | 15.7 | 15.7 | 10.6 |
| Saginaw, Mich. | 12.9 | 3 | 15.9 | 15.9 | 10.8 |
| Marquette, Mich. | 12.9 | 3 | 15.9 | 15.9 | 10.8 |
| Green Bay, Wisc. | 12.6 | 4 | 16.6 | 16.6 | 9.4 |
| Madison, Wisc. | 12.3 | 4 | 16.3 | 16.3 | 9.1 |
| Milwaukee, Wisc. | 12.1 | 4 | 16.1 | 16.1 | 8.9 |
| La Crosse, Wisc. | 13.2 | 4 | 17.2 | 17.2 | 10 |
| Minneapolis, Minn. | 11.4 | 3 | 14.4 | 14.4 | 9.9 |
| Duluth, Minn. | 13.5 | 3 | 16.5 | 16.5 | 9.9 |
| Mankato, Minn. | 13.1 | 3 | 16.1 | 16.1 | 8 |
| Des Moines, Ia. | 11.4 | 3 | 14.4 | 14.4 | 8 |
| Davenport, Ia. | 12.5 | 3 | 15.5 | 13.5 | 9.3 |
| Sioux City, Ia. | 12.1 | 3 | 15.1 | 15.1 | 8.9 |
| Mason City, Ia. | 12.5 | 3 | 15.5 | 15.5 | 9.3 |
| St. Louis, Mo. | *11.9 | 2 | 13.9 | 13.9 | 8.3 |
| Kansas City, Mo. | †12.9 | 2 | 14.9 | 14.9 | 7.6 |
| St. Joseph, Mo. | † 8.4 | 2 | 10.4 | 10.4 | 7.5 |
| Fargo, N. D. | 14.9 | 3 | 17.9 | 17.9 | 11.9 |
| Grand Forks, N. D. | 15.2 | 3 | 18.2 | 18.2 | 12.2 |
| Minot, N. D. | 14.9 | 3 | 17.9 | 17.9 | 11.9 |
| Pierre, S. D. | 13 | 4 | 17 | 17 | 10.4 |
| Huron, S. D. | 13.3 | 4 | 17.3 | 17.3 | 10.7 |
| Wichita, Kans. | 10.8 | 3 | 13.8 | 13.8 | 7.8 |
| Bartlesville, Okla. | 9 | 5 | 14 | 14 | 7 |

*Includes city tax of ½c.

†Includes city tax of 1c.

### Stanolind Blue Gasoline

Stanolind Blue prices are 1.5c per gal. under Red Crown, except at following points:

| | | | | | Oil |
|---|---|---|---|---|---|
| E. St. Louis, Ill. | 10.2 | 3 | 13.2 | 10.7 | 8.2 |
| Peoria, Ill. | 10.9 | 3 | 13.9 | 12 | 9 |
| Quincy, Ill. | 9.2 | 3 | 12.2 | 13.7 | 8.8 |
| St. Joseph, Mo. | †6.9 | 2 | 8.9 | 8.9 | 7.5 |
| St. Louis, Mo. | *9.9 | 2 | 11.9 | 11.9 | 8.3 |
| Detroit, Mich. | 9.5 | 3 | 12.5 | 12.5 | 10.7 |
| Grand Rapids, Mich. | 11.2 | 3 | 14.2 | 13.2 | 10.6 |
| Saginaw, Mich. | 11.4 | 3 | 14.4 | 12.6 | 10.8 |
| Wichita, Kans. | 9.3 | 3 | 12.3 | 10.8 | 7.8 |
| Minneapolis, Minn. | 8.9 | 3 | 11.9 | 11.9 | 9.9 |
| Evansville, Ind. | 10.6 | 4 | 14.6 | 14 | 9.9 |
| Davenport, Ia. | 11 | 3 | 14 | 11.9 | 9.3 |
| Des Moines, Ia. | 11 | 3 | 14 | 11.9 | 8 |
| Sioux City, Ia. | 10.6 | 3 | 13.6 | 10.9 | 8.9 |
| Green Bay, Wisc. | 12.1 | 3 | 15.1 | 14.6 | 9.4 |
| La Crosse, Wisc. | 11.7 | 4 | 15.7 | 15 | 10 |

*Includes city tax of ½c.

†Includes city tax of 1c.

**Discounts:** Q.D.A., effective May 11, 1931, on gasoline: **To re-sellers,** thru territory, except Chicago:

Under 75,000 gals., off service station price: Ethyl, 3c Red Crown, 2.5c and Stanolind Blue, 1.5c per gal.; 75,000 gals. and over, off tank wagon price; Ethyl, 4c, Red Crown, 3.5c, and Stanolind Blue, 2c.

In Chicago, in any quantity, discounts are 4c per gal. on Ethyl gasoline, 3.5c on regular motor fuel grades and 2c on "third" grades, by principal marketing companies, discounts being off service station prices in quantities up to 75,000 gallons, and off t.w. price in quantities of 75,000 gallons and over.

**To consumers,** thru territory, except Chicago:

1,000 to 75,000 gals., off tank wagon price: Ethyl, 3c; Red Crown, 2.5c; and Stanolind Blue, 1.5c; 75,000 gals. and over, off tank wagon price, Ethyl, 4c; Red Crown, 3.5c; and Stanolind Blue, 2c.

In Chicago, in quantities over 1,000 gallons: Ethyl gasoline, 4c; regular grades 3.5c; "third" grades 2c, all discounts being off tank wagon price.

## S. O. NEBRASKA

### Red Crown Gasoline

| | | | | | |
|---|---|---|---|---|---|
| Omaha, Neb. | 10.9 | 4 | 14.9 | 15.9 | 9.25 |
| McCook, Neb. | 13 | 4 | 17 | 17 | 7.5 |
| Norfolk, Neb. | 12.75 | 4 | 16.75 | 17.75 | 9.75 |
| North Platte, Neb. | 13.75 | 4 | 17.75 | 18.75 | 10.5 |
| Scottsbluff, Neb. | 13 | 4 | 17 | 17 | 9 |

### Nebraska Blue (Third Grade)

| | | | | Oil |
|---|---|---|---|---|
| Omaha, Neb. | ... | 4 | 13.9 | 9.25 |

**Discounts:** on gasoline to dealers, off normal service station prices: Red Crown Ethyl 3c; Red Crown 2.5c per gal.; Nebraska Blue, 1c.

## S. O. LOUISIANA

### Standard Gasoline

| | Posted Retail T.W. | Tax | Total Posted Retail T.W. | Posted Retail S.S. | Oil T.W. |
|---|---|---|---|---|---|
| Little Rock, Ark. | 11.5 | 6 | 17.5 | 18 | 11 |
| Alexandria, La. | 9.5 | *6 | 15.5 | 15.5 | †12 |
| Baton Rouge, La. | 11.5 | 5 | 16.5 | 17 | †12 |
| New Orleans, La. | 8.5 | *6 | 14.5 | 14.5 | *10 |
| Lake Charles, La. | 8 | *6 | 14 | 14 | †12 |
| Shreveport, La. | 11.5 | 5 | 16.5 | 17 | †12 |
| Lafayette, La. | 11.5 | *6 | 17.5 | 18 | †12 |
| Bristol, Tenn. | 12.5 | 6 | 18.5 | 19.5 | 14 |
| Chattanooga, Tenn. | 13.5 | 6 | 19.5 | 20 | 12 |
| Knoxville, Tenn. | 14 | 6 | 20 | 20.5 | 13.5 |
| Memphis, Tenn. | 10 | 6 | 16 | 16 | 11 |
| Nashville, Tenn. | 13 | 6 | 19 | 19.5 | 12.5 |

### Blue-Gas (Third Grade)

| | Tax | Total Posted Retail S.S. | Oil T.W. |
|---|---|---|---|
| Little Rock, Ark. | 6 | 12 | 11 |
| Alexandria, La. | *6 | 13.5 | †12 |
| Baton Rouge, La. | 5 | 11.75 | †12 |
| New Orleans, La. | *6 | 12.5 | *10 |
| Lake Charles, La. | *6 | 12.5 | †12 |
| Shreveport, La. | 5 | 12 | †12 |
| Chattanooga, Tenn. | 6 | 15 | 12 |
| Knoxville, Tenn. | 6 | 17 | 13.5 |
| Memphis, Tenn. | 6 | 15 | 11 |
| Nashville, Tenn. | 6 | 14 | 12.5 |

**Discounts:** on gasoline and kerosine, in S. O. La. territory: To dealers and commercial consumers from the tankwagon, 2c per gal. off posted retail tank wagon price.

*Lake Charles, Alexandria, New Orleans and Lafayette gasoline tax includes 5c state tax and 1c parish tax. New Orleans kerosine price includes 1c parish tax in addition to 1c state tax.

†Kerosine price in Louisiana includes 1c state tax.

## MAGNOLIA PETROLEUM

### Maximum Mileage Gasoline

| | T.W. | Tax | Total T.W. | S.S. | T.W. |
|---|---|---|---|---|---|
| Muskogee, Okla. | 5 | 3 | 10 | 12 | 6 |
| Oklahoma City. | 9 | 5 | 14 | 16 | 7 |
| Tulsa, Okla. | 9 | 5 | 14 | 16 | 8 |
| Fort Smith, Ark. | 11.5 | †5 | 16.5 | 17 | 11 |
| Little Rock, Ark. | 11.5 | 6 | 17.5 | 17 | 11 |
| Texarkana, Ark.* | 9 | *4 | 13 | 15 | 8 |
| Dallas, Tex. | 10 | 4 | 14 | 15 | 8 |
| El Paso, Tex. | 11 | 4 | 15 | 17 | 10 |
| Fort Worth, Tex. | 10 | 4 | 14 | 15 | 7 |
| Houston, Tex. | 9 | 4 | 13 | 15 | 8 |
| San Antonio, Tex. | 9 | 4 | 13 | 15 | 7 |

### Third Grade Gasoline

| | | | | | Oil |
|---|---|---|---|---|---|
| Muskogee, Okla. | 6 | 5 | 11 | 11 | 6 |
| Oklahoma City. | 8 | 5 | 13 | 13 | 7 |
| Tulsa, Okla. | 8 | 5 | 13 | 13 | 8 |
| Fort Smith, Ark. | 8 | 5 | 13 | 13 | 11 |
| Little Rock, Ark. | 6 | 6 | 12 | 12 | 11 |
| Texarkana, Ark. | 6 | 4 | 10 | 10 | 8 |
| Dallas, Tex. | 6 | 4 | 10 | 10 | 8 |
| Fort Worth, Tex. | 6 | 4 | 10 | 10 | 7 |
| Houston, Tex. | 7 | 4 | 11 | 11 | 8 |
| San Antonio, Tex. | 7 | 4 | 11 | 11 | 7 |

**Discounts:** on third grade gasoline, 1c per gal. off t.w. price to dealers. Fort Smith and Little Rock Maximum Mileage gasoline and kerosine prices are subject to 2c per gal. discount to dealers off t.w. price.

*Within city of Texarkana, the state tax on gasoline is 4c per gal. conforming with the Texas state tax. In this district outside of the city the 6c Arkansas tax applies.

†Fort Smith gasoline prices include Oklahoma tax of 5c; outside Fort Smith. Arkansas tax of 6c applies.

## CONTINENTAL OIL

| | | | | | |
|---|---|---|---|---|---|
| Denver, Colo. | 10 | 4 | 14 | 17 | 12.5 |
| Pueblo, Colo. | 8 | 4 | 12 | 15 | 12 |
| Grand Junc., Colo. | 14 | 4 | 18 | 21 | 14.5 |
| Casper, Wyo. | 11 | 4 | 15 | 18 | 10 |
| Cheyenne, Wyo. | 11 | 4 | *15 | 15 | 11.5 |
| Butte, Mont. | 13 | 5 | 18 | 21 | 16 |
| Helena, Mont. | 16 | 5 | 21 | 24 | 16 |
| Salt Lake City, Utah. | 13.5 | 4 | 17.5 | 20.5 | 16 |
| Boise, Ida. | 15.5 | 5 | 20.5 | 23.5 | 18 |
| Twin Falls, Ida. | 15.5 | 5 | †20.5 | 20 | 18 |
| Albuquerque, N. M. | 13 | 5 | 18 | 21 | 14 |

†3.5c per gal. off t.w. price at Twin Falls to dealers.

*3c per gal. off t.w. price at Cheyenne to dealers.

## S. O. CALIFORNIA

| | Tax | Tank Truck (Resale) | *Retail Prices | Oil |
|---|---|---|---|---|
| San Francisco, Cal. | 3 | 13.5 | 16.5 | 15.5 |
| Los Angeles, Cal. | 3 | 13 | 16 | 15.5 |
| Fresno, Cal. | 3 | 13.5 | 16.5 | 17 |
| Phoenix, Ariz. | 5 | 14.5 | 17 | 20 |
| Reno, Nev. | 4 | 17.5 | 20.5 | 19 |
| Portland, Ore. | 4 | 15 | 18 | 16.5 |
| Seattle, Wash. | 5 | 16 | 19 | 16.5 |
| Spokane, Wash. | 5 | 19.5 | 22.5 | 20.5 |
| Tacoma, Wash. | 5 | 16 | 19 | 16.5 |

**Discounts:** none on gasoline. Tank truck prices are those to resale trade; wholesale prices are generally 6c above tank truck prices, except at Phoenix, Ic.

*Retail prices are those of Standard Stations, Inc., marketing subsidiary of the Standard Oil Co. of California.

## CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

### ONTARIO

#### Regular Gasoline

| | T.W. | Tax | Total T.W. | S.S. | Oil T.W. |
|---|---|---|---|---|---|
| Toronto | 17.5 | 5 | 22.5 | 26 | 18.5 |
| Ottawa | 18.5 | 5 | 23.5 | 27 | 19.5 |
| North Bay | 21.5 | 5 | 26.5 | 32 | 22.5 |
| Fort William | 19.5 | 5 | 24.5 | 28 | 17 |
| Border Cities, including Windsor | 17.5 | 5 | 22.5 | 26 | 16.5 |

#### Third Grade Gasoline

| | | | | |
|---|---|---|---|---|
| Toronto | 5 | .... | 23.5 | 18.5 |

#### Regular Gasoline

### MANITOBA

| | | | | |
|---|---|---|---|---|
| Winnipeg | 19.5 | 5 | 24.5 | 28 | 13.5 |

### SASKATCHEWAN

| | | | | | |
|---|---|---|---|---|---|
| Regina | 23.5 | 5 | 28.5 | 32.5 | 17 |

### ALBERTA

| | | | | | |
|---|---|---|---|---|---|
| Edmonton | 24.5 | 5 | 29.5 | 33 | 18 |
| Calgary | 21 | 5 | 26 | 29.5 | 14.5 |

(*Continued on page 92*)

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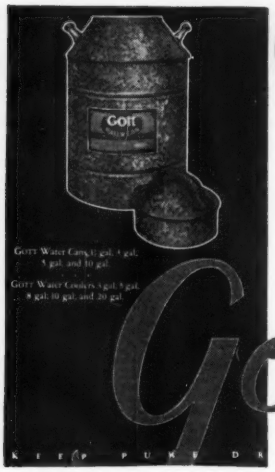


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WAX—PETROLEUM COKE
CYLINDER—ENGINE—CORDAGE

## Gulf Refining Company

***General Sales Offices:***
**PITTSBURGH, PA.**

*District Sales Offices:* New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans

# Crude Oil Prices (in Effect Nov. 23, 1931)

*Crude prices for the whole year in OIL PRICE HANDBOOK published annually*

### EASTERN FIELDS

**Posted by Joseph Seep Purchasing Agency**

(All Penna. Grade Crude except Corning, Effective Nov. 1, 1931)

Bradford—Alleghany district (Penna and New York, posted by Tide Water Pipe Co., Ltd.).....$2.00
Penna. Grade Oil in National Transit Lines (Postings discontinued by Seep Agency)
Penna. Grade Oil in Southwest Penna. Pipe Lines..... 1.70
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)..... 1.60
Penna. Grade Oil in Buckeye Pipe Lines (Mackaburg, O.)..... 1.50
Corning Grade in Buckeye Pipe Lines (Ohio).. 0.85
(Effective Nov. 7, 1931)
Ragland in Cumberland Pipe Lines (Kentucky) (Effective Jan. 9, 1929).....$0.60

**Posted by Other Companies**

Ashland Refining Co.:
Somerset in Ashland lines (Kentucky) (Effective Nov. 4, 1931).....$0.80
Stoll Oil Refining Co.:
Stoll Pipe Line Oil (Kentucky) (Effective Nov. 9, 1931).....$0.75

### MICHIGAN

**(Posted by Pure Oil Co.)**

Midland, Midland County (Aug. 23, 1931)..$0.73

### CENTRAL STATES FIELDS

**Posted by Ohio Oil Co.**

Effective Nov. 3, 1931

| | | | |
|---|---|---|---|
| Wooster | $1.15 | Princeton | $0.95 |
| Lima | 1.00 | Illinois | 0.95 |
| Indiana | 0.60 | West Kentucky | 0.90 |

### CANADIAN CRUDE

**Posted by Imperial Oil Refineries, Ltd.**

Effective Nov. 3, 1931

Petrolia, Ont.....$1.90
Oil Springs, Ont.....$1.97

**Effective Aug. 25, 1931**

Turner Valley, Alta.:

| | | | |
|---|---|---|---|
| 40-44.9 | $1.50 | 50 and above | $2.65 |
| 45-49.9 | $2.08 | | |

### OKLAHOMA, KANSAS and NORTH TEXAS

**Prices of Stanolind Crude Oil Purchasing Co. (In Oklahoma, Kansas, North and North Central Texas)**

(Effective Nov. 2, 1931)

| | | | |
|---|---|---|---|
| Below 29 | $0.61 | 35-35.9 | $0.75 |
| 29-29.9 | 0.63 | 36-36.9 | 0.77 |
| 30-30.9 | 0.65 | 37-37.9 | 0.79 |
| 31-31.9 | 0.67 | 38-38.9 | 0.81 |
| 32-32.9 | 0.69 | 39-39.9 | 0.83 |
| 33-33.9 | 0.71 | 40 and above | 0.85 |
| 34-34.9 | 0.73 | | |

Effective Nov. 2, 1931, above prices were met by these companies: Humble, The Texas Co., Continental Oil, Barnsdall and Phillips Petroleum; on Nov. 3 by Carter Oil, Sinclair, Pure Oil and Gulf.

Humble's prices affect Ranger, North Texas, Mexia, Powell, Boggy Creek, Wortham, Currie and Moran, Tex.

**East Texas**

Discontinued by Humble, June 3.

Magnolia posts $0.83 effective Nov. 2, 1931.

**Magnolia Petroleum Co.**
**(In Oklahoma and Texas)**
Effective Nov. 2, 1931

**Oklahoma:**

Cushing, Morrison, Oklahoma City, Seminole Wewoka and Yale.....$0.83
Cement, Duncan and Walters..... 0.75
Healdton..... 0.52
Hewitt and Graham..... 0.67

**Texas:**

North and North Central:
Archer, Burkburnett, Comanche, Electra, Henrietta, Olden and Stephens.....$0.83
East Texas.....$0.83

**East Central Texas:**

Thrall (Effective July 24, 1931).....$0.40

**Central Texas:**

Mexia, Wortham, Corsicana Light, Panola county and Lytton Springs.....$0.79

**Panhandle:**

Gray county.....$0.73
Carson-Hutchinson counties.....$0.66

**West Texas:**

Winkler, Crane, Upton, Howard, Glasscock, and Mitchell counties.....$0.50

**South Texas:**

Mirando.....$0.75
Darst Creek..... 0.60
Corsicana heavy and Luling..... 0.49

**Louisiana-Arkansas**

Effective Nov. 4, 1931

**North Louisiana:**

Bull Bayou.....$0.83
Cotton Valley..... 0.61
Haynesville..... 0.65
Pine Island..... 0.73

**Arkansas:**

El Dorado and Rainbow.....$0.63
El Dorado, East Field (Calion).....$0.55
Smackover.....$0.55

### PANHANDLE TEXAS

**Humble Oil & Refining Co.**

Effective Nov. 2, 1931

| Hutchinson-Carson Counties | | Gray County | |
|---|---|---|---|
| Below 35 | $0.56 | | $0.61 |
| 35-35.9 | .58 | | .63 |
| 36-36.9 | .60 | | .65 |
| 37-37.9 | .62 | | .67 |
| 38-38.9 | .64 | | .69 |
| 39-39.9 | .66 | | .71 |
| 40 and above | .68 | | .73 |

Above prices met by The Texas Co. on Nov. 2 in Hutchinson, Carson and Gray counties.

### WEST TEXAS and NEW MEXICO

**Humble Oil & Refining Co.**

Effective Nov. 2, 1931

Pecos, Winkler, Crane, Upton, Crockett, Ector, Howard and Glasscock Counties, Tex., and Lea county, N. Mex.....$0.50

Nov. 2, 1931, The Texas Co. same prices in Crane, Upton, Winkler and Lea counties as Humble.

### SOUTH and SOUTHWEST TEXAS

**(Posted by Humble Oil & Refining Co.)**

Effective Nov. 2, 1931

Mirando.....$0.75
Salt Flat..... 0.60
Darst Creek..... 0.60
Pettus, Bee County..... 0.85

**(Posted by The Texas Co.)**

Effective Nov. 2, 1931

Markham.....$0.67

### NORTH LOUISIANA—ARKANSAS FIELDS

**Prices of Standard Oil Co. of Louisiana**

Caddo, Homer, Haynesville, Bull Bayou, El Dorado Crichton, De Soto, Sabine, Sarepta and Carterville.

Effective Nov. 4, 1931

| | | | |
|---|---|---|---|
| Below 25 | $0.53 | 33-33.9 | .71 |
| 25-25.9 | .55 | 34-34.9 | .73 |
| 26-26.9 | .57 | 35-35.9 | .75 |
| 27-27.9 | .59 | 36-36.9 | .77 |
| 28-28.9 | .61 | 37-37.9 | .79 |
| 29-29.9 | .63 | 38-38.9 | .81 |
| 30-30.9 | .65 | 39-39.9 | .83 |
| 31-31.9 | .67 | 40 and above | .85 |
| 32-32.9 | .69 | | |

Smackover.....$0.55
*Urania, La..... 0.55
†Stephens, Ark.:
Below 29.....$0.51
29 and above..... 0.54

*Urania posted by Louisiana Oil Refining Corp.

†Stephens posted by Atlantic Oil Producing Co. and Louisiana Oil Refg. Corp.

### *GULF COASTAL

**Posted by Humble Oil & Refining Co.**

Effective Nov. 2, 1931

| | | | |
|---|---|---|---|
| Below 25 | $0.70 | 33-33.9 | $0.79 |
| 25-25.9 | 0.71 | 34-34.9 | .80 |
| 26-26.9 | .72 | 35-35.9 | .81 |
| 27-27.9 | .73 | 36-36.9 | .82 |
| 28-28.9 | .74 | 37-37.9 | .83 |
| 29-29.9 | .75 | 38-38.9 | .84 |
| 30-30.9 | .76 | 39-39.9 | .85 |
| 31-31.9 | .77 | 40 and above | .86 |
| 32-32.9 | .78 | | |

Refugio heavy.....$0.75

*Includes these fields: Barbers Hill, Goose Creek, Hull, Humble, Liberty, Moss Bluff, Mykawa, Orange, Pierce Junction, Raccoon Bend, Refugio light, Sour Lake, Spindletop, Sugarland and West Columbia.

The Texas Co. met above Gulf Coastal schedule Nov. 2.

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### Correction

Price of Mid-Continent neutral oil 100 No. 2 color, 15 to 30 pour point was published in error at 5 cents as of Nov. 16 in the Nov. 18 issue of NATIONAL PETROLEUM NEWS, page 75. Correct price on Nov. 16 was 4 cents.

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### Exhibitors To Put On Program

CLEVELAND—A program by exhibitors will feature the annual Winter Frolic of the Wisconsin Petroleum association, Pfister hotel, Milwaukee, Jan. 27 and 28. Exhibitors will have two hours each morning to put on demonstrations, plays, talks, or entertainment features. The marketers' meetings will be held in the afternoon. There will be a banquet the last night.

M. N. Teige, Wisconsin Petroleum Co., Stoughton, is chairman in charge of the meeting. M. G. Peeters, Wadhams Oil Corp., Milwaukee, is in charge of exhibits. Ray Andrew, Pennsylvania Oil Co., Madison, is chairman of the speakers' committee. Charles Lockwood, C. H. Lockwood Oil Co., Kenosha, will direct the entertainment.

ST. LOUIS—A girl was born to Mr. and Mrs. E. J. Keitel on Nov. 16. Mr. Keitel is president of the Columbia Oil Co., Inc., oil compounder and marketer here. Both mother and baby are doing fine.

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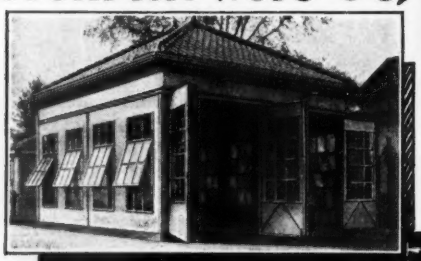
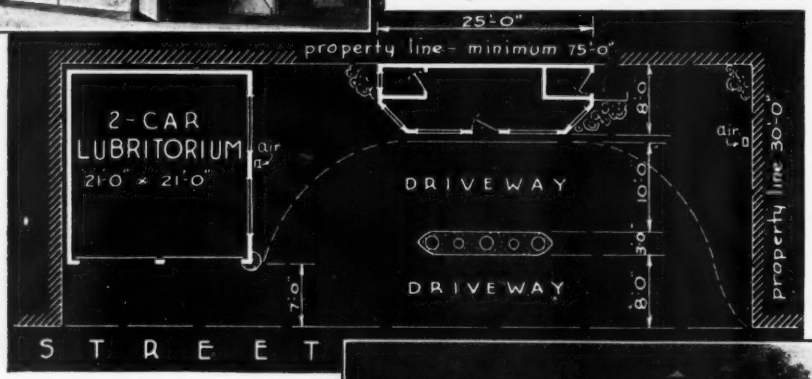
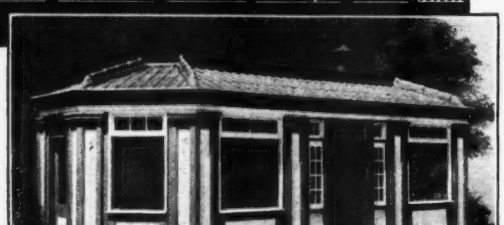
According to the Otis Elevator Co., 29 different types of lubricants are required to operate modern elevators. The company compounds many of its own lubricants at its plant at Harrison, N. J. It considers lubrication of the worm gear, bronze with a steel worm, its most important problem.

# From the word "GO," EDWARDS Filling Stations Pay DIVIDENDS





EDWARDS' Filling Stations go up like "greased lightning", fit into their surroundings like a setting; dominate day and night and "grow" as you expand, economically.

The above layout is a typical Edwards plan, with everything worked out scientifically for economy of time, space and investment.

Each Edwards Filling Station, Lubritorium, Parking Lot Office, etc. is an example of efficiency of design and construction, which have made them popular with the leaders of the industry for the past thirty years.

This long and close association with the industry's problems has given us valuable facts and figures that may be helpful to you. Write, giving your lot dimensions and frontage.

*Edwards Spanish Metal Tile is the crowning glory of more than half the distinctive service stations*

THE EDWARDS MANUFACTURING CO.
524-544 Eggleston Ave. Cincinnati, Ohio



TURN to the classified advertising page near the back of this issue. You will find some interesting items there • • • • • • •


## W. H. Barber Expanding Minneapolis Plant

MINNEAPOLIS, Minn.—The W. H. Barber Co. has been taking advantage of the business depression to build for the future. Its present building operation is to enclose with an attractive brick wall its plant here. Some months ago it completed a new office building, and before that structure was erected, a large garage was built. Future plans call for the rebuilding of its compounding plant which is the only building in its group that is not of modern fire-safe construction.

The new office building is 66 x 120 feet. It is of brick, one story high with half basement. Provision has been made in the sub-structure for addition of more stories when growth of the business demands more space.

The basement contains women's rest room, kitchen and lunch room for women, storeroom, sales conference room and locker room for men. The first floor contains the executive and general offices. The individual offices are partitioned with clear plate glass.

The new building is designed to harmonize with its surroundings, a residential district. The brick wall cuts off view of the plant yard. It encloses a three-acre site.

The plant has tankage for fuel oils, lubricating oils, alcohol, and turpentine. The company is reputed to be one of the largest alcohol jobbers in the country. It also deals in rosin, glue and shellac . Although the company sells all petroleum products in tank car lots, it has no light oil storage at the Minneapolis plant. An affiliated company, Petroleum Service Co., handles its wholesale and retail light oil business in the Twin Cities. P. J. Schroeder is head of this company.

Since the retirement of W. H. Barber, control of the W. H. Barber Co. has passed to executives and department heads with N. C. Beim the largest stockholder. Mr. Beim joined the company as salesman almost 20 years ago. He is president and general manager.

### Beckstrom Discusses Safety Work

TULSA, Nov. 21.—Dr. R. C. Beckstrom of the University of Tulsa's school of petroleum engineering was guest speaker before the monthly meeting of the Kansas-Oklahoma division of the Petroleum Safety Council Nov. 20. Doctor Beckstrom told of accident prevention work in the Russian oil fields where he spent several months as consulting engineer. The evening of Nov. 20 the Safety Council and the Motor Transport Association of Oklahoma held a joint meeting at which time Doctor Beckstrom continued his talks on Russia.

# Crude Oil Prices (in Effect Nov. 23, 1931)

(Prices are per barrel at the well)

*(Crude Oil Prices for the whole year in OIL PRICE HANDBOOK published annually)*

### ROCKY MOUNTAIN FIELDS

**(Posted by Midwest Refining Co.)**

Effective Nov. 2, 1931

Salt Creek, Wyo.:

| | | | |
|---|---|---|---|
| Below 29° | $0.61 | 32-32.9 | $0.69 |
| 29-29.9 | 0.63 | 33-33.9 | 0.71 |
| 30-30.9 | 0.65 | 34-34.9 | 0.73 |
| 31-31.9 | 0.67 | 35-35.9 | 0.75 |
| 36-36.9 | $0.77 | 39-39.9 | $0.83 |
| 37-37.9 | 0.79 | 40 and above | 0.85 |
| 38-38.9 | 0.81 | | |

Effective Nov. 3, 1931

| | |
|---|---|
| Cat Creek, Mont. | $1.05 |
| Hogback, N. Mex. | 0.80 |
| Hobbs, N. Mex. (Effective Nov. 2, 1931) | 0.50 |

**(Posted by Ohio Oil Co.)**

Effective Nov. 3, 1931

| | |
|---|---|
| Elk Basin, Wyo. | $1.05 |
| Grass Creek Light | 1.05 |
| Mig Muddy | 0.83 |
| Lance Creek | 1.05 |
| Rock Creek | 0.85 |
| Sunburst, Mont. | 1.00 |

### CALIFORNIA CRUDE

**††Standard Oil Co. of California**

Effective June 19, 1931

| Gravity | Signal Hil *Seal Beach *Alamitos Heights | Huntington Beach | Inglewood | Playa del Roy | Olinda-Brea Canon | Elwood Terrace | Torrance | Richfield | †Whittier †La Habra Montebello | Coyote Hills | Santa Fe Springs | Newhall McKittrick Kern River | Midway Sunset Elk Hills Buena Vista Hills | Lost Hills | Coalinga | Wheeler Ridge | **Athens **Rosecrans **Dominguez | **Santa Paula | **Orcutt |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14-19.9 | $0.65 | $0.65 | $0.65 | $0.65 | $0.65 | .... | $0.65 | $0.65 | $0.65 | $0.65 | .... | $0.55 | $0.55 | $0.55 | $0.55 | $0.55 | .... | $0.65 | $0.55 |
| 20-20.9 | .65 | .65 | .66 | .65 | .66 | .... | .65 | .65 | .65 | .... | .... | .55 | .55 | .55 | .55 | .... | .... | .65 | .56 |
| 21-21.9 | .65 | .65 | .68 | .66 | .67 | .... | .65 | .66 | .65 | .65 | .... | .... | .55 | .57 | .55 | .55 | .... | .65 | .57 |
| 22-22.9 | .65 | .66 | .70 | .67 | .68 | | .66 | .68 | .65 | .65 | .... | .... | .56 | .59 | .55 | .55 | .... | .65 | .59 |
| 23-23.9 | .67 | .68 | .72 | .68 | .70 | | .67 | .70 | .65 | .66 | .... | .... | .58 | .60 | .55 | .55 | .... | .65 | .61 |
| 24-24.9 | .69 | .70 | .74 | .69 | .72 | | .68 | .72 | .65 | .67 | $0.65 | .... | .61 | .62 | .55 | .55 | $0.69 | .66 | .63 |
| 25-25.9 | .71 | .72 | .76 | .70 | .74 | | .70 | .74 | .65 | .69 | .65 | .... | .64 | .64 | .57 | .55 | .71 | .68 | .65 |
| 26-26.9 | .73 | .74 | .... | | .76 | .... | .... | .... | .... | .71 | .65 | .... | .66 | .66 | .... | .... | .73 | .70 | .67 |
| 27-27.9 | .75 | .76 | .... | | .78 | .... | .... | .... | .... | .73 | .68 | .... | .68 | .67 | .... | .... | .75 | .72 | .... |
| 28-28.9 | .77 | .... | .... | | .80 | .... | .... | .... | .... | .75 | .71 | .... | .71 | .69 | .... | .... | .77 | .74 | .... |
| 29-29.9 | .79 | .... | .... | | .... | .... | .... | .... | .... | .77 | .73 | .... | .74 | .71 | .... | .... | .79 | .76 | .... |
| 30-30.9 | .81 | .... | .... | | .... | .... | .... | .... | .... | .79 | .75 | .... | .76 | .72 | .... | .... | .81 | .78 | .... |
| 31-31.9 | .... | .... | .... | | .... | .... | .... | .... | .... | .... | .78 | .... | .... | .... | .... | .... | .83 | .... | .... |
| 32-32.9 | .... | .... | .... | | .... | .... | .... | .... | .... | .... | .80 | .... | .... | .... | .... | .... | .85 | .... | .... |
| 33-33.9 | .... | .... | .... | | .... | $0.79 | .... | .... | .... | .... | .83 | .... | .... | .... | .... | .... | .87 | .... | .... |
| 34-34.9 | .... | .... | .... | | .... | .81 | .... | .... | .... | .... | .86 | .... | .... | .... | .... | .... | .89 | .... | .... |
| 35-35.9 | .... | .... | .... | | .... | .84 | .... | .... | .... | .... | .87 | .... | .... | .... | .... | .... | .... | .... | .... |
| 36-36.9 | .... | .... | .... | | .... | .87 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |

*Seal Beach and Alamitos Heights prices end with $0.75 for crude 27 and above.

†Whittier and La Habra crude ends with 22-22.9 gravity.

**Posted by Union Oil Co. of California, effective June 20, 1931.

††Postings on Kettleman Hills, Ventura Avenue, Athens-Rosecrans and Dominguez discontinued by Standard. Kettleman Hills, 30 and above, posted at 66 cents by Associated Oil Co. and General Petroleum Co., June 19, 1931.

# REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

### Refiners' Supplies

| | Nov. 23 | Nov. 16 |
|---|---|---|
| Soda Ash Light 58% bags, cwt. | $1.15-1.38 | $1.15-1.38 |
| Silicate of Soda 60 deg. drums ....cwt. | $1.75-1.90 | $1.75-1.90 |
| Silicate of Soda 40 deg. tank cars....cwt. | $0.70 | $0.70 |
| Silicate of Soda 40 deg. drums ....cwt. | $1.00 | $1.00 |
| Sal Soda wks.... | $0.90-1.20 | $0.90-1.20 |
| Caustic Soda 76% solid..cwt. | $2.25-2.50 | $2.25-2.50 |
| Sulfuric Acid 60 deg. tank cars, f. o. b. shipping point per ton.... | $11.00-12.50 | $11.00-12.50 |
| Sulfur, flowers of.....cwt. | $3.10-4.00 | $3.10-4.00 |
| Liquid Chlorine, tank cars, wks....lb. | 1.75 | 1.75 |

### Compounder's Supplies

**Vegetable Oils**

| | | |
|---|---|---|
| Linseed carloads, spot.....lb. | 7.60-7.80 | 7.60-7.80 |
| Tanks, spot.... | 7.00-7.20 | 7.00-7.20 |
| Soya Bean, Tank, coast...lb. | 5.00 | 5.00 |

**Oleic Acid**

| | | |
|---|---|---|
| Distilled, tanks....lb. | 6.50 | 6.50 |
| Distilled, bbls....lb. | 7.375 | 7.375 |
| Saponified, tanks....lb. | 6.75 | 6.75 |
| Saponified, bbls....lb. | 7.625 | 7.625 |

**Lard Oils**

| | | |
|---|---|---|
| Prime Winter Strained....lb. | 12 00 | 12 00 |
| Extra Winter Strained....lb. | 8 25 | 8 25 |
| Extra....lb. | 8.00 | 8 00 |
| Extra No. 1....lb. | 7.50 | 7 50 |
| No. 1....lb. | 7.25 | 7 25 |
| No. 2....lb. | 7 00 | 7 00 |
| Tallow oil....lb. | 7.00 | 7 00 |

**Neatsfoot Oil**

| | | |
|---|---|---|
| Pure, bbls....lb. | 9.75 | 9 75 |
| Extra, bbls....lb. | 7.50 | 7.50 |
| No. 1 bbls....lb. | 7.25 | 7.25 |
| Cold Pressed....lb. | 13.75 | 13.75 |

**Fish Oils**

Menhaden Oil

| | | |
|---|---|---|
| Light Pressed....gal. | 33–34 | 33–34 |
| Light Pressed, tank cars, N. Y....gal. | 27–28 | 27–28 |
| Yellow bleached....gal. | 36–37 | 36–37 |
| Whale, extra winter bleached, ....gal. | 61–63 | 61–63 |

**Naval Stores**

| | | |
|---|---|---|
| Steam distilled turpentine, N. Y....gal. | 43 | 40 |
| Steam, distilled turpentine, Savannah....gal. | 40 | 37 |
| Gum turpentine, N. Y....gal. | 50 | 50 |
| Gum turpentine, f.o.b. cars Savannah....gal. | 44 | 44 |
| Wood Rosin, N Y....bbl. | $4.95 | $4.75 |
| Wood Rosin F. Savn'h....bbl. | $4.75 | $4.65 |
| Gum Rosin B. N. Y....bbl. | $4.05 | $4.10 |
| Gum Rosin B, f.o.b. cars Savannah....bbl. | $3.30 | $3.35 |
| Rosin oil, pure....gal. | 47 | 47 |
| Rosin, oil, compounded..gal. | 41 | 41 |

**Pine Tar**

| | | |
|---|---|---|
| Kiln burnt.... | $10.00-11.00 | $10.00-11.00 |
| Retort....bbl. | $11.00-12.00 | $11.00-12.00 |

**Alcohol**

| | | |
|---|---|---|
| Denatured Formula 5, in tanks, per gal.... | 24 | 24 |

# Oil Stocks and Finances

## Louisiana Oil Refining Cuts Operating Loss

CLEVELAND, Nov. 23.—Louisiana Oil Refining Corp. has reported net loss of $462,801 for the third quarter of 1931. This compares with a net loss of $614,626 the second quarter and a profit before federal taxes of $29,378 the third quarter of 1930. This company's net loss in the first nine months of 1931 was $1,521,798, compared with profit of $77,188 before federal taxes the first nine months of 1930.

North Central Texas Oil Co. has reported net loss of $8098 for the third quarter. This compares with $1915 net loss the second quarter and net profit of $63,414 the third quarter of 1930. Net loss for the first nine months of 1931 was $2482, compared with net profit of $160,243 the first nine months of 1930.

## Ohio Oil Reports Loss For 12-Month Period

CLEVELAND, Nov. 23.—Ohio Oil Co. reports loss of $1,618,132 after taxes, depreciation and depletion for the 12 months ended Sept. 30. After $3,456,531 dividends on the preferred stock and $4,953,480 on the common the company had a deficit of $10,028,-143.

The company's balance sheet of Sept. 30 shows the elimination of almost $7,500,000 in funded debt outstanding at the end of 1930. Total assets Sept. 30 stood at $381,166,454 before deduction of accrued depreciation and depletion reserves of $181,-351,503. The surplus Sept. 30 was $36,116,454.

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**Chesebrough Declares Extra**

NEW YORK, Nov. 21. — Chesebrough Mfg. Co. has declared an extra dividend of $1 a share for the fourth quarter of 1931. The previous three quarters the company paid 50 cents a share extra. It also declared the regular dividend of $1 a share. The company thus is paying $6.50 a share on its $25 par stock in 1931. This is the same rate paid in 1930 and 1929.

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TORONTO — An increase in the present 5 cent provincial tax on gasoline in Quebec will be made shortly, according to Premier Taschereau. The increase, estimates indicate, will range from 2 to 5 cents per gallon. Falling off in liquor revenue and the need for improvement of roads are given as reasons for higher taxes on gasoline.

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**Refinery Again Sold**

TULSA, Nov. 21.—The Rusk Refining Co. plant at Overton, recently sold to Butler & Calhoun of Overton, has been resold by that company to the Diamond Refining Co. The plant is being operated at approximately 300 barrels daily.

## Financial Notes

**National Transit Co.**—T. L. Blair, a director since 1918, will retire Nov. 30 after 36 years' service with the company.

**Simms Petroleum Co.** — Company bought 85,672 shares of its capital stock at $6 a share under its recent stock purchase offer which expired Nov. 13. The company offered to buy 100,000 shares and each shareholder was allowed to offer 12½ per cent of his holdings. Under the terms of the offer the company may buy in the open market the remainder of the 100,000 shares at an average price of $6 a share exclusive of commission.

**Indian Refining Co.** — Stockholders have approved reducing this company's authorized capital from 2,000,000 to 1,275,000 shares. Control is owned by the Texas Corp.

**Swan-Finch Oil Corp.**—All directors were re-elected at the annual meeting. Subsequently all officers were re-elected.

**Galena Oil Corp.**—Meeting of stockholders has been called for Dec. 1 to approve sale of part of assets to Valvoline Oil Co. and part to E. W. Edwards, president of Valvoline, and to vote on reduction of capital stock to $12,000 to facilitate distribution of Valvoline common stock received for assets on a basis of one share of Valvoline for each block of 34.69 shares of Galena outstanding.

## Motor Tourists Spend Nearly 3 Billions

WASHINGTON, Nov. 2.—Vacation motor trips this year caused the expenditure of $2,750,000,000, according to the American Automobile Association. That was 15 per cent less than the expenditure in 1930. However, gasoline consumption, according to the same organization, was 10 per cent greater. From that the association drew the conclusion that the trips were shorter, cutting down on hotel and other expenditures incident to long tours, but more frequent.

Another fact which the association thinks tends to support the theory of shorter but more frequent tours is that the number of visitors to the national parks increased, the total passing of 3,000,000 persons for the first time in the history of the parks. The number of visitors to the parks was 14 per cent greater than in 1930. These figures were made up by W. G. Bryant, chairman of the association's touring board.

In still further support of the shorter but more tours theory Mr. Bryant cites the fact that European travel was off about 30 per cent and that in several industries the recession was from 30 to 35 per cent.

"One of the most annoying elements confronting the motorist," said Mr. Bryant touching a spot that has irritated many tourists, "is the large number of unnecessary traffic lights that have been erected in thousands of crossroad villages. Some states have developed a standard for the erection of such lights with a view to safety and the facilitation of traffic. But it is clear that the problem requires attention on a nation-wide basis."

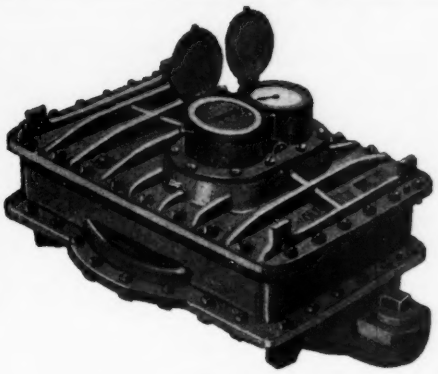
The bewildering diversity of traffic regulations persisted, he said, notwithstanding the fact that a uniform code of vehicle and traffic regulations had been adopted. His suggestion was that road laws and regulations should be made on the basis of whole states or even several states grouped into an area, so as to give the motorist a chance to maintain his poise for the prevention of accidents.

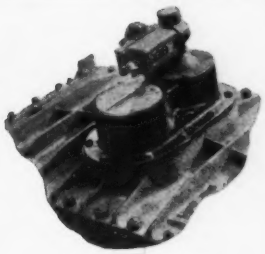
## Specifications Complaint Heard At Capital

TULSA, Nov. 21.—The Oklahoma State Corporation Commission Nov. 19 heard the complaints of E. B. Howard and others relative to the proposal of the commission to change the specification requirements for motor fuel sold in the state. The proposal embodied the permission to sell a gasoline of lower than U. S. Government specification for motor gasoline, provided the dealer posted a sign on the pump that the gasoline was "inferior grade."

No ruling was made at the time of the hearing, the commission announcing a decision would be announced at a late date.

Mr. Howard is head of the Howard Oil Co. which for a number of years has distributed a naphtha-natural gasoline blend in the vicinity of Tulsa.





*VERTICAL RESET COUNTER ATTACHMENT in place of Dial—EXTRA. See Catalog.*

## THE GRANBERG TYPE "ET" 2 INCH TRUCK METER

THIS METER was designed for use on Tank Trucks. The operating principle of THE GRANBERG METER makes it particularly adaptable to this type of service where only low heads are available. It requires very little pressure to operate it which makes it possible to obtain high delivery rates and at the same time accurately record the amounts delivered. We carry in stock various designs of Truck Strainers to suit different arrangements of piping, also Meters and Appliances for Pump equipped Furnace Oil Trucks.

*Literature mailed on request*

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AQUA SYSTEMS, INC., Distributors—2 Lafayette St., New York City
OILMEN'S SERVICE AND SUPPLY CO., Distributors—142 Berkeley St., Boston, Mass.
NATIONAL PUMPS CORP., Dayton, Ohio, Manufacturers of Granberg Meter Equipped Retail Pumps.

# PETROLEUM PRODUCTS
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**GASOLINE KEROSENE NAPHTHA**
**CRUDE OIL FUEL OIL GAS OIL FURNACE OIL**
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**UNFILTERED AND FILTERED**
**BRIGHT STOCKS**
**COLD SETTLED AND CENTRIFUGED**
**PALE—RED OILS**
**WAX—PETROLATUM**
**TECHNICAL WHITE OILS**
**WHITE MINERAL OILS**

***For 35 years of reliability, service and integrity—this Company enjoys an International Reputation***

## JAMES B. BERRY SONS' CO., INC.
### *General Office*—Oil City, Pa.

***District Offices at***
**New York, Philadelphia, Boston, Chicago**
**London—Hamburg**

***Cable Address—JASBER Oil City*** ***All Codes***

## UPSIDE DOWN OR RIGHT SIDE UP

Your samples must be ready for inspection from any angle. That's why we make our sample oil bottles so that they look equally well in any position. Extreme care in the formation of bottoms and shoulders; use of the finest perfume bottle glass; and painstaking handblowing provide a container that will show your product to its best advantage, no matter how you look at it. Owens-Illinois Glass Co., Toledo, Ohio.

OWENS-ILLINOIS
BOTTLES

# Transactions in Oil Shares on New York Stock Exchange

| 1930 High | 1930 Low | 1931 High | 1931 Low | Listed Shares | Par Value | Company | Div. Rate Period | Last Div. Paid | Transactions Week Ended Nov. 21 Sales Shares | High | Low | Last | Week's Change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31 1/8 | 16 1/2 | 23 | 13 | 922,075 | N.P. | Amerada Corp. | 50cQ | Oct. 30, 31 | 2,700 | 17 | 16 | 16 | — 1 |
| 37 | 5 1/8 | 12 3/8 | 2 | 209,180 | N.P. | American Republics Corp. | .... | ..... | 800 | 2 1/2 | †2 | 2 | — 1 |
| 51 | 30 | 31 | 9 | 2,240,000 | $25 | Associated Oil Co. | .... | June 30, 31 | ..... | ..... | ..... | ..... | ..... |
| 51 3/8 | 16 3/4 | 23 5/8 | 10 | 2,696,650 | 25 | Atlantic Refining Co. | 25cQ | Sept. 15, 31 | 13,100 | 13 7/8 | 11 3/4 | 11 3/4 | — 1/2 |
| 34 | 8 3/8 | 14 1/2 | 4 3/4 | 2,257,705 | 25 | Barnsdall Corp. A | .... | May 11, 31 | 9,100 | 7 1/4 | 6 1/2 | 6 7/8 | — 3/8 |
| 35 | 21 | 25 | 12 | 2,060,966 | 25 | California Petroleum Corp. | ...** | Jan. 1, 29 | ..... | ..... | ..... | ..... | ..... |
| 20 3/8 | 8 3/4 | 10 1/4 | 7 1/2 | 1,444,970 | N.P. | Colonial Beacon Oil Co. | .... | ..... | 500 | 10 1/2 | 9 | 9 | 0 |
| 30 1/2 | 7 3/4 | 12 | 5 | 4,720,640 | N.P. | Continental Oil Co. (Del.) | .... | ..... | 17,581 | 7 7/8 | 7 | 7 | — 5/8 |
| 71 1/2 | 22 3/8 | 47 | 9 5/8 | 413,333 | N.P. | General Asphalt Co. | 50cQ | Sept. 15, 31 | 7,600 | 16 3/8 | 15 | 15 1/4 | — 1/4 |
| 116 7/8 | 29 1/4 | 68 1/2 | 19 | 96,475 | $100 | Houston Oil Co. | .... | ..... | 7,500 | 29 | 23 3/4 | 23 3/4 | — 3 3/8 |
| 11 3/4 | 6 5/8 | 14 1/8 | 4 | 675,434 | 25 | do new | .... | ..... | 4,500 | 5 3/4 | 5 | 5 | — 5/8 |
| 28 3/8 | 3 | 4 5/8 | 1 5/8 | 556,546 | 10 | Indian Refining Co. | .... | Dec. 15, 20 | 500 | 2 1/8 | 2 | 2 | — 1/2 |
| 12 | 3 1/2 | 4 1/2 | 1 3/8 | 1,309,100 | N.P. | Louisiana Oil Refg. Corp. | ..... | ..... | 300 | 1 3/8 | 1 5/8 | 1 5/8 | 0 |
| 90 | 66 | 55 | 34 | 40,000 | $100 | do pfd. | $1.62 1/2Q | Nov. 16, 31 | ..... | .... | .... | .... | .... |
| 10 3/8 | 1 3/4 | 3 3/4 | 1/2 | 330,000 | N.P. | Maracaibo Oil Exploration Co. | .... | ..... | ..... | .... | .... | .... | .... |
| 182 | 150 | 171 | 90 | 459,428 | $100 | Mexican Petroleum Co. | .... | Apr. 20, 31 | ..... | .... | .... | .... | .... |
| 100 | 100 | 100 | 100 | 120,000 | 100 | do pfd. | $2Q | Oct. 20, 31 | ..... | .... | .... | .... | .... |
| 33 | 11 | 16 3/4 | 5 | 1,857,912 | N.P. | Mid-Continent Petroleum Corp. | .... | Feb. 16, 31 | 6,800 | 7 1/2 | 6 1/2 | 6 7/8 | — 3/8 |
| 32 | 16 | 19 1/2 | 6 1/2 | 6,648,052 | N.P. | Ohio Oil Co. | .... | Mar. 14, 31 | 9,100 | 8 7/8 | 7 3/4 | 7 7/8 | — 1 1/8 |
| 64 1/4 | 42 | 35 1/8 | 20 | 1,000,000 | $50 | Pan Amer. Pet. & Trans. Co. | 40cQ | Oct. 20, 31 | ..... | .... | .... | .... | .... |
| 67 1/2 | 30 | 36 1/2 | 20 | 2,473,916 | 50 | do B non-voting | 40cQ | Oct. 20, 31 | 600 | 23 | 23 | 23 | — 1 1/8 |
| 12 3/4 | 1 3/4 | 4 1/4 | 3/4 | 199,370 | N.P. | Panhandle Prod. & Refg. Co. | .... | ..... | 100 | 1 | 1 | 1 | — 3/8 |
| 80 | 47 1/2 | 20 | 9 1/2 | 25,666 | $100 | do pfd. | .... | July 2, 23 | ..... | .... | .... | .... | .... |
| 27 1/4 | 5 1/2 | 10 7/8 | 4 1/4 | 2,551,084 | N.P. | Petroleum Corp. of America | .... | June 1, 31 | 5,800 | 6 1/2 | 5 5/8 | 5 3/4 | — 5/8 |
| 44 3/4 | 11 1/2 | 16 5/8 | 4 3/4 | 4,419,262 | N.P. | Phillips Petroleum Co. | .... | Jan. 2, 31 | 31,700 | 7 5/8 | 6 5/8 | 7 | — 3/8 |
| 2 1/2 | 1/2 | 1 1/2 | 3/8 | 1,184,917 | $25 | Pierce Oil Corp. | .... | ..... | 2,200 | 1/2 | 3/4 | 3/4 | — 1/8 |
| 52 | 7 1/2 | 23 3/4 | 5 1/2 | 150,000 | 100 | do pfd. | .... | Feb. 1, 22 | 300 | 8 | 7 1/2 | 7 1/2 | — 2 |
| 7 3/8 | 1 3/8 | 3 3/8 | 7/8 | 2,500,000 | N.P. | Pierce Petroleum Corp. | .... | Feb. 16, 31 | 3,700 | 1 5/8 | 1 1/4 | 1 1/4 | — 1/4 |
| 54 | 11 1/4 | 20 3/8 | 5 1/4 | 2,441,432 | $25 | Prairie Oil & Gas Co. | .... | Mar. 31, 31 | 4,000 | 7 3/4 | 7 1/4 | 7 1/2 | — 1/8 |
| 60 | 16 5/8 | 26 1/2 | 7 5/8 | 4,050,000 | 25 | Prairie Pipe Line Co. | .... | July 1, 31 | 2,500 | 10 | 9 | 9 | — 1 3/8 |
| 11 3/8 | 1 | 6 | 1 1/2 | 749,017 | 50 | Producers & Refiners Corp. | .... | Sept. 15, 23 | 400 | 1 5/8 | 1 1/2 | 1 1/2 | — 1/4 |
| 40 | 11 1/2 | 16 | 4 1/4 | 56,907 | 50 | do pfd. | .... | May 4, 25 | 30 | 6 | 6 | 6 | — 5/8 |
| 27 1/4 | 7 5/8 | 11 7/8 | 5 | 3,038,370 | 25 | Pure Oil Co. | .... | Sept. 1, 30 | 6,200 | 6 1/2 | 5 1/2 | 5 3/4 | — 3/4 |
| 114 3/4 | 90 1/2 | 101 7/8 | 64 1/2 | 130,000 | 100 | do 8% pfd. | $2Q | Oct. 1, 31 | 100 | 75 | 71 | 71 | — 9 |
| 28 1/2 | 4 1/8 | 6 3/4 | 1/8 | 2,126,250 | N.P. | Richfield Oil Co. (California) | .... | Sept. 1, 30 | 9,200 | 1 1/8 | 1 | 1 | 0 |
| 25 3/4 | 5 | 10 1/4 | 2 1/2 | 1,235,814 | N.P. | Rio Grande Oil Co. | .... | July 25, 30 | 5,400 | 3 | 2 1/2 | 2 5/8 | — 3/8 |
| 56 1/2 | 36 7/8 | 42 5/8 | 13 1/2 | 617,443 | $13.40 | Royal Dutch Co. (N. Y. Shares) | 93.85c | Aug. 4, 31 | 8,200 | 18 3/8 | 16 1/2 | 16 5/8 | — 1 1/8 |
| 37 | 9 3/4 | 20 3/4 | 5 1/2 | 1,244,383 | N.P. | Seaboard Oil of Del. | .... | Oct. 15, 24 | 10,700 | 9 | 7 7/8 | 8 | — 1/4 |
| 48 3/8 | 26 | 34 | 9 3/4 | 63,852 | £2 | Shell Transp. & Trading Co. | 72.6c | July 23, 31 | 40 | 12 | 12 | 12 | — 2 |
| 25 1/2 | 5 1/4 | 10 1/4 | 3 1/4 | 13,070,625 | N.P. | Shell Union Oil Corp. | .... | June 30, 30 | 5,700 | 5 | 4 1/2 | 4 1/2 | — 3/8 |
| 106 3/4 | 55 | 78 | 23 3/8 | 400,000 | $100 | do pfd. | .... | July 1, 31 | 1,200 | 31 3/8 | 29 1/2 | 29 1/2 | — 1 |
| 37 | 5 3/8 | 11 | 4 3/4 | 869,271 | 10 | Simms Petroleum Co. | .... | Sept. 15, 30 | 3,400 | 6 3/4 | 5 1/4 | 5 1/4 | — 1 |
| 32 | 9 3/4 | 15 7/8 | 5 1/2 | 6,103,263 | N.P. | Sinclair Cons. Oil Corp. | .... | Apr. 15, 31 | 35,300 | 7 3/4 | 6 3/4 | 6 3/4 | — 3/4 |
| 112 1/4 | 86 | 103 | 77 | 141,294 | $100 | do pfd. | $2Q | Nov. 14, 31 | 400 | 82 | 78 | 78 | —10 |
| 42 | 10 1/8 | 12 7/8 | 3 1/8 | 1,000,069 | 25 | Skelly Oil Co. | .... | Dec. 15, 30 | 2,300 | 4 1/2 | 4 | 4 1/8 | 0 |
| 99 3/4 | 42 | 62 | 10 | 120,000 | 100 | do pfd. | .... | May 1, 31 | 2,500 | 19 | 17 | 17 | — 3 |
| ..... | .... | 21 | 12 1/8 | 31,273,328 | 25 | Socony Vacuum Corp. | 40cQ | Sept. 15, 31 | 33,800 | 14 3/8 | 12 7/8 | 13 | — 3/4 |
| 106 3/4 | 98 | 105 1/4 | 88 1/2 | 754,935 | 100 | S. O. Export Corp. pfd. | $2.50S.A. | June 30, 31 | 600 | 97 | 95 1/4 | 95 1/2 | — 1 |
| 75 | 42 1/4 | 51 3/4 | 28 5/8 | 13,102,900 | N.P. | S. O. California | 62 1/2cQ | Sept. 15, 31 | 29,664 | 34 | 31 1/4 | 31 5/8 | — 1 3/8 |
| 49 | 14 3/4 | 19 | 8 1/4 | 320,000 | $25 | S. O. Kansas | .... | Mar. 16, 31 | 2,200 | 12 1/4 | 11 1/4 | 11 3/4 | — 1/2 |
| 84 7/8 | 43 1/2 | 52 1/2 | 28 1/4 | 25,639,466 | 25 | S. O. New Jersey | ††25cQ | Sept. 15, 31 | 49,100 | 35 | 32 | 32 3/8 | — 1 7/8 |
| 70 | 39 | 45 1/4 | 26 3/8 | 1,544,349 | N.P. | Sun Oil Co. | 25cQ | Sept. 15, 31 | 400 | 31 7/8 | 31 1/2 | 31 1/2 | — 3 |
| 108 1/2 | 97 3/4 | 104 1/2 | 88 3/4 | 100,000 | $100 | do pfd. | $1.50Q | Sept. 1, 31 | 40 | 91 1/2 | †88 3/4 | 88 3/4 | — 1 3/4 |
| 9 5/8 | 3/4 | 1 1/4 | 1/2 | 776,979 | N.P. | Superior Oil Corp. | .... | ..... | 833 | 5/8 | 5/8 | 5/8 | 0 |
| 60 1/2 | 28 3/4 | 36 1/4 | 15 | 9,851,211 | $25 | The Texas Corp. | 50cQ | Oct. 1, 31 | 28,400 | 20 1/2 | 18 | 18 1/8 | — 1/4 |
| 14 1/2 | 4 | 6 1/2 | 2 1/2 | 930,432 | 10 | Texas Pacific Coal & Oil Co. | .... | Dec. 31, 29 | 1,600 | 3 3/8 | 3 | 3 3/8 | + 3/8 |
| 17 3/4 | 5 7/8 | 9 | 3 1/2 | 5,997,872 | N.P. | Tide Water Associated Oil Co. | .... | Feb. 16, 31 | 10,200 | 4 1/8 | 3 5/8 | 3 3/4 | — 1/2 |
| 89 3/4 | 53 | 68 | 20 1/2 | 732,649 | $100 | do pfd. | $1.50Q | Oct. 1, 31 | 1,900 | 34 1/2 | 28 | 28 | — 7 |
| 31 | 12 | 18 | 10 1/2 | 2,191,823 | N.P. | Tide Water Oil Co. | ..... | June 30, 31 | ..... | ..... | ..... | ..... | ..... |
| 94 7/8 | 68 | 83 | 35 | 199,446 | $100 | do pfd. | $1.25Q | Nov. 16, 31 | 1,000 | 45 | 43 | 43 | + 5 |
| 50 | 20 1/8 | 26 5/8 | 11 3/4 | 2,225,302 | 25 | Union Oil Co. of California | 50cQ | Nov. 10, 31 | 7,100 | 16 7/8 | 15 1/2 | 15 1/2 | — 3/4 |
| 38 1/2 | 23 | 25 1/8 | 18 1/2 | 1,254,048 | N.P. | Union Tank Car Co. | 40cQ | Sept. 1, 31 | 200 | 19 | 18 5/8 | 19 | — 3/8 |
| 27 | 4 1/4 | 7 1/2 | 1 | 769,531 | N.P. | Warner Quinlan Co. | .... | July 3, 30 | 200 | 2 1/2 | 2 1/8 | 2 1/2 | 0 |
| 21 | 6 1/2 | 9 1/8 | 3 | 428,967 | N.P. | H. F. Wilcox Oil & Gas Co. | .... | May 10, 28 | 400 | 5 1/8 | 5 | 5 1/8 | — 3/8 |

*New high †New low ††Also extra—S. O. New Jersey 25c. Total sales 389,688.

## New York Bonds

**Week Ending Nov. 20**

| | High | Low | Last | Change |
|---|---|---|---|---|
| Asso. Oil Gold 6s | 101 5/8 | 101 1/2 | 101 1/2 | — 1/4 |
| Atlantic Refg. deb. 5s | 97 1/4 | 96 7/8 | 97 | — 1/2 |
| Cal. Pet. 5 1/2s | 87 1/4 | 87 1/4 | 87 1/4 | + 1/4 |
| General Pet. 5s | 102 | 100 1/2 | 101 | — 1/2 |
| Humble Oil & Refg. 5s | 100 1/4 | 100 | 100 1/4 | + 1/4 |
| Humble Oil & Refg. 5 1/2s | 101 1/2 | 100 5/8 | 100 3/4 | + 1/8 |
| Pan Amer. P & T 6s | 102 1/2 | 101 3/4 | 101 3/4 | 0 |
| Pan Amer. P & T 6s | 21 5/8 | 20 1/4 | 20 1/4 | — 1/4 |
| Pan Amer. P & T 6s | 17 1/4 | 17 | 17 | —3 |
| Phillips Pet. 5 1/4s | 62 | 59 3/4 | 60 | —1 1/4 |
| Pure Oil 5 1/2s | 85 | 83 1/2 | 83 1/2 | — 1/2 |
| Pure Oil 5 1/2s | 82 1/2 | 81 | 81 | —1 |
| Richfield Oil of Calif. 6s | 18 | 17 1/2 | 17 1/2 | —2 1/2 |
| Shell Union Oil 5s | 71 1/2 | 69 1/2 | 70 | 0 |
| Shell Union Oil 5s with war. | 71 1/8 | 69 1/2 | 69 1/2 | —1 1/8 |
| Sinclair Con. Oil 7s | 90 5/8 | 89 | 89 5/8 | + 5/8 |
| Sinclair Con. Oil 6 1/2s | 84 1/2 | 83 7/8 | 83 7/8 | — 1/8 |
| Sinclair Con. Crude 5 1/2s | 100 | 99 1/2 | 99 3/4 | — 1/4 |
| Sinclair Pipeline | 98 1/4 | 97 3/4 | 97 3/4 | — 3/4 |
| Skelly Oil 5 1/2s | 58 | 56 1/2 | 56 1/2 | —1 1/2 |
| S. O. N. J. 5s | 102 3/8 | 101 1/2 | 101 1/2 | — 1/2 |
| S. O. N. Y. 4 1/2s | 97 1/2 | 96 1/4 | 96 1/4 | —1 1/8 |
| Union Oil of Calif. 6s A | 103 1/2 | 103 | 103 | +1 |
| Union Oil of Calif. 5s C | 96 | 95 1/2 | 95 1/2 | — 3/4 |
| Union Oil of Calif. 5s war. | 83 1/2 | 82 1/8 | 83 1/2 | 0 |
| Warner-Quinlan 6s | 36 | 36 | 36 | +3 |
| White Eagle Oil 5 1/2s war. | 101 7/8 | 101 3/4 | 101 7/8 | + 1/4 |

### Collier's to Have Gas Tax Story

NEW YORK, Nov. 24.—An article on gasoline taxes and gasoline tax evasion entitled "Bootleg Gasoline" will appear in the Dec. 5 Collier's. The article is by John T. Flynn, whose recently published book "Graft in Business" was prepared from material obtained on a motor tour of the United States and from data supplied by the American Petroleum Institute.

## Pittsburgh Stock Exchange

**Transactions Week Ended Nov. 20, 1931**

| | Sales | High | Low | Last | Change Over Week |
|---|---|---|---|---|---|
| Arkansas Nat. Gas | 30 | 3 1/4 | 3 | 3 | — 1/4 |
| do pfd. | 249 | 5 1/2 | 5 1/4 | 5 1/4 | 0 |
| Devonian Oil | 100 | 5 | 5 | 5 | + 3/4 |
| Lone Star Gas | 4,196 | 10 | 9 1/4 | 9 1/2 | — 1/2 |
| do pfd. | 10 | 90 | †90 | 90 | —8 |
| Shamrock Oil & Gas | 2,650 | 2 3/4 | 2 | 2 | — 1/8 |
| Western Pub. Serv. | 675 | 4 7/8 | 4 1/2 | 4 1/2 | — 3/8 |

†New low record.

## Cleveland Stock Market

**Nov. 20, 1931**

| | Bid | Asked | Last Sale |
|---|---|---|---|
| Canfield Oil | 50 | 75 3/8 | 85 |
| Fred G. Clark | 3/4 | 1 1/8 | 3/4 |
| National Refining | 6 1/4 | 8 | 6 |
| do pfd. | .. | 115 | 11? |

## Latest Changes in Tank Wagon Prices

*(Continued from page 85)*

| | | | | | |
|---|---|---|---|---|---|
| **BRITISH COLUMBIA** | | | | | |
| Vancouver | 21 | 5 | 26 | 28 | 22 |
| **QUEBEC** | | | | | |
| Montreal | 17.5 | 5 | 22.5 | 26 | 19.5 |
| Quebec City | 20.5 | 5 | 25.5 | 29 | 21.5 |
| Three Rivers | 20.5 | 5 | 25.5 | 29 | 21.5 |
| **NEW BRUNSWICK** | | | | | |
| St. John | 20 | 5 | 25 | 29 | 22 |
| Moncton | 20 | 5 | 25 | 29 | 22 |
| **NOVA SCOTIA** | | | | | |
| Halifax | 20 | 5 | 25 | 29 | 22 |
| **PRINCE EDWARD ISLAND** | | | | | |
| Charlottetown | 20 | 5 | 25 | 29 | 22 |

## NAPHTHA PRICES

| | Oleum] Spirits | V.M.&P. Naphtha | Cleaner Naphtha |
|---|---|---|---|
| Chicago | 11.7 | 13.7 | 15.2 |
| Detroit | 14.4 | 15.9 | 16.7 |
| Kansas City | †12.9 | †14.4 | †15.2 |
| Milwaukee | 13.4 | *16.9 | *17.7 |
| Minneapolis | **17.7 | **19.2 | **20 |
| St. Louis | 12.6 | 14.1 | 14.9 |
| New York | ... | 12 | 17 |
| Boston | ... | 17 | 17 |

*Includes 2c state tax. †Includes 1c city tax.
**Includes 3c state tax.

### Petroleum Spiri s (Solvent)

| | |
|---|---|
| Tank Cars (F.o.b. refinery or seaboard terminal) | |
| New York Harbor | 9.00 |
| Philadelphia district | 8.50–9.00 |
| Providence | 9.50 |
| Tank Wagon or Steel Barrels | |
| New York City | 12 |
| Syracuse | 17 |
| Rochester | 14 |
| Buffalo | ‡14 |
| Providence | 17 |
| Boston | 17 |
| Bridgeport | 15 |
| Newark | 16 |
| Philadelphia | 13 |
| Lancaster | 17 |
| Altoona | 17 |
| Baltimore | 16 |

**Note:** 2c off above t.w. prices to large buyers in some instances.

‡Buffalo price is net.

## Aviation Gasoline Prices

Following are tank wagon prices of aviation gasoline in principal marketing territories showing state and municipal taxes:

### S. O. NEW JERSEY

**Prices in Effect Nov. 23, 1931**

| | T.W. | Tax | Total T.W. |
|---|---|---|---|
| Newark, N. J. | 14.9 | * | 14.9 |
| Baltimore, Md. | 14.9 | 4 | 18.9 |
| Washington, D. C. | 15 | 2 | 17 |

*New Jersey road tax of 3c does not apply on aviation gasoline, exemption being claimed at time of purchase.

All above prices are on Stanavo Aviation Gasoline.

### COLONIAL BEACON OIL CO.

| | | | |
|---|---|---|---|
| New York City | 16 | 2 | 18 |
| Boston, Mass. | 18 | 3 | 21 |

### S. O. PENNSYLVANIA

| | | | |
|---|---|---|---|
| Philadelphia, Pa. | 15 | 3 | 18 |
| Pittsburgh, Pa. | 15 | 3 | 18 |
| Altoona, Pa. | 15 | 3 | 18 |

### S. O. OHIO

| | | | |
|---|---|---|---|
| Thru Ohio | 14 | 4 | 18 |

Discounts given by S. O. Ohio: For delivery to airports only; 2,000 gals. or over per month, 1c per gal.; 6,000 gals. or over per month, 2c; 12,000 gals. and over per month, 3c; 24,000 gals. and over per month, 4c.

### S. O. INDIANA

| | | | |
|---|---|---|---|
| Chicago | 15 | 3 | 18 |
| Indianapolis, Ind. | 15.3 | 4 | 19.3 |
| Detroit, Mich. | 15.8 | 3 | 18.8 |
| Milwaukee, Wis. | 15.1 | 2 | 17.1 |
| Minneapolis, Minn. | 16.2 | 3 | 19.2 |
| St. Louis, Mo. | 14.4 | 2.5 | 16.9 |
| Kansas City, Mo. | 14.9 | 3 | 17.9 |
| Fargo, N. D. | 17.9 | 3 | 20.9 |
| Huron, S. D. | 16.3 | 4 | 20.3 |
| Wichita, Kan. | 13.8 | 3 | 16.8 |

In S. O. Indiana territory, buyer pays state and city taxes on aviation gasoline, and if he can get a refund from the state, he does so. Kansas City tax of 3c includes 1c city tax; St. Louis tax of 2.5c includes ½c city tax.

### S. O. LOUISIANA

| | | | |
|---|---|---|---|
| New Orleans, La. | 18 | 6 | 24 |
| Nashville, Tenn. | 20 | 6 | 26 |
| Memphis, Tenn. | 19 | 6 | 25 |

2c per gal. discount off above posted retail t.w. prices to dealers and commercial consumers.

### S. O. NEBRASKA

| | | | |
|---|---|---|---|
| Omaha | 16.25 | 4 | 20.25 |

2c per gal. refund to reseller.

### CONTINENTAL OIL CO.

| | | | |
|---|---|---|---|
| Denver, Colo. | 13 | 4 | 17 |
| Cheyenne, Wyo. | 15 | 4 | 19 |
| Helena, Mont. | 19 | 5 | 24 |
| Salt Lake City, Utah. | 16.5 | 4 | 20.5 |
| Albuquerque, N. M. | 17 | 5 | 22 |
| Boise, Ida. | 18.5 | 5 | 23.5 |

### S. O. CALIFORNIA

| | | | |
|---|---|---|---|
| Phoenix, Ariz. | 17.5 | 4 | 21.5 |
| Los Angeles, Cal. | 16.5 | 3 | 19.5 |
| San Francisco, Cal. | 17 | 3 | 20 |
| Reno, Nev. | 21 | 4 | 25 |
| Portland, Ore. | 17.5 | 4 | 21.5 |
| Seattle, Wash. | 17.5 | 3 | 20.5 |
| Spokane, Wash. | 21.5 | 3 | 24.5 |

**Note:** 4c per gallon added to t.w. price, in S. O. California territory, to customers taking delivery direct into the fuel tank of planes.

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CALL FOR BIDS to Purchase Royalty Oil Accruing to the United States from the Salt Creek, Wyoming, oil field. Pursuant to the provisions of Section 36 of the act approved February 25, 1920 (41 Stat., 437), sealed proposals, in duplicate, will be received in the office of the Secretry of the Interior, Washington, D. C., on or before noon on December 1, 1931, from responsible bidders for the purchase, for a period beginning January 1, 1932, of all royalty oil accruing to the United States from Government lands in the Salt Creek, Wyoming, oil field. For the calendar year 1930 the total Government royalty oil from Salt Creek field amounted to approximately 1,325,000 barrels, and for the period from January 1 to July 31, 1931, to approximately 666,000 barrels, about 14 per cent of the production of the field, the average gravity in both years being in the range from 36.0 to 36.9 degrees A. P. I. Additional information may be obtained from the Director, Geological Survey, Department of the Interior, Washington, D. C., or the Supervisor, Geological Survey, Casper, Wyoming. Bids are invited on three separate items as follows: Item 1. Royalty oil for the period beginning January 1, 1932, and ending December 31, 1932. Item 2. Royalty oil for the period beginning January 1, 1932, and ending December 31, 1934. Item 3. Royalty oil for the period beginning January 1, 1932, and ending December 31, 1936. Bids must be in the following form: For the period beginning January 1, 1932, and ending December 31, 193—, (name of bidder), offers ———— cents per barrel above the highest field price for oil of equal or lower gravity in Oklahoma and Kansas, and/or in Wyoming, whichever is the higher, as published or offered by any responsible recognized purchaser for crude oil in quantity not less than 2,000 barrels a day." Delivery of royalty oil will be made in the field without cost to the Government to the successful bidder or for his account. Payments for the royalty oil are to be made to the Register of the United States Land Office, Cheyenne, Wyoming, on or before the fifteenth day of each month following that in which delivery is made. The quantity and quality of the oil will be determined by tank measurement and suitable tests, the measured quantity will be corrected for impurities in excess of one-half on one per cent, and the volume computed in terms of standard barrels at 60°F. Each bidder must submit with his bid a bond in the sum of $1,000 or a certified check payable to the order of the Secretary of the Interior in the sum of $1,000 as a guarantee that he will, if successful, promptly execute a satisfactory contract and furnish a bond in the sum of at least $250,000, conditioned upon full and complete compliance with the terms of the contract. The Secretary of the Interior may accept the offer of the highest bidder and/or bidders and reserves the right to reject all bids whenever within his judgment the interest of the United States demands. Storage facilities are available on Naval Petroleum Reserve No. 3, Wyoming (Teapot), for approximately 1,500,000 barrels of oil. Information in regard thereto may be obtained from the Secretary of the Navy. Sealed bids are to be submitted to the Secretary, Department of the Interior, Washington, D. C., the envelope to be marked plainly "Bid on Salt Creek royalty oil". No bid received after the time herein fixed for submitting bids will be considered. RAY LYMAN WILBUR, Secretary of the Interior.

# Standard Oil Stocks on New York Curb Market

| 1930 High | 1930 Low | 1931 High | 1931 Low | Shares Issued | Par Value | Company | Div. Rate Period | Last Div. Paid | Transactions Sales Shares | Week Ended Nov. 21 High | Low | Last | Week's Change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 11¼ | 16 | 6¼ | 40,000 | $25 | Borne Scrymser Co. | .... | Oct. 15, 30 | 50 | 11 | 11 | 11 | — 1 |
| 69 | 39⅞ | 56 | 39 | 200,000 | 50 | Buckeye Pipe Line Co. | $1Q | Sept. 15, 31 | ..... | .... | .... | .... | .... |
| 184⅞ | 100¼ | 129½ | 88 | 120,000 | 25 | Chesebrough Mfg. Co. | ††$1Q | Sept. 30, 31 | ..... | .... | .... | .... | .... |
| 7⅝ | 3 | 3½ | 1⅝ | 5,977,873 | N.P. | Creole Petroleum Co. | .... | ..... | 2,900 | 2½ | 2⅛ | 2⅛ | — ⅛ |
| 65¾ | 20¼ | 39 | 20⅜ | 30,000 | 50 | Cumberland Pipe Line Co. | .... | June 15, 31 | ..... | .... | .... | .... | .... |
| 54¾ | 26 | 36 | 19 | 50,000 | 100 | Eureka Pipe Line Co. | $1Q | Nov. 2, 31 | .... | .... | .... | .... | .... |
| 6¾ | 2½ | 3 | 1 | 280,000 | N.P. | Galena Oil Corp. | .... | ..... | 200 | 1⅛ | 1⅛ | 1⅛ | 0 |
| 119 | 57¼ | 72 | 47¾ | 2,974,645 | $25 | Humble Oil & Ref'g. Co. | 50cQ | Oct. 1, 31 | 2,800 | 53 | 51¾ | 52 | — 2 |
| 30 | 15 | 18½ | 7⅜ | 26,557,496 | N.P. | Imperial Oil Corp. | 12½cQ | Sept. 1, 31 | 4,900 | 11 | 10 | 10 | — ⅞ |
| 28 | 15 | 18 | 7⅛ | ..... | N.P. | do registered | 12½cQ | Sept. 1, 31 | 20 | 9⅜ | 9⅜ | 9⅜ | — 1⅞ |
| 41 | 14½ | 21¼ | 5½ | 300,000 | $10 | Indiana Pipe Line Co. | 25cQ | Nov. 14, 31 | 100 | 8¾ | 8½ | 8½ | — ½ |
| 24 | 11⅜ | 15½ | 7⅜ | 14,247,088 | N.P. | International Petroleum Co. | 25cQ | Sept. 15, 31 | 6,800 | 11⅝ | 10½ | 10⅝ | — ¼ |
| 22⅜ | 11½ | 17½ | 8⅛ | 509,000 | $12.50 | National Transit Co. | 25cQ | Sept. 15, 31 | ..... | .... | .... | .... | .... |
| 21 | 10⅜ | 14½ | 5⅞ | 100,000 | 10 | New York Transit Co. | ††15cQ | Oct. 15, 31 | 200 | 8¾ | 8¼ | 8¼ | — ⅛ |
| 54 | 26¼ | 35½ | 20 | 40,000 | 50 | Northern Pipe Line Co. | ††$1.50S.A. | July 1, 31 | 150 | 35 | 33 | 33 | — 2 |
| 108 | 100⅜ | 102⅞ | 80 | 579,465 | 100 | Ohio Oil Co. pfd. | $1.50Q | Sept. 15, 31 | 500 | 85 | 80 | 80¼ | — 4¼ |
| 32 | 12 | 15½ | 6 | 400,000 | 25 | Penn Mex. Fuel Co. | 50c | Oct. 31, 31 | 100 | 7⅛ | 7⅛ | 7⅛ | — ⅛ |
| 33 | 4⅞ | 16⅞ | 3¼ | 160,000 | 25 | Solar Refining Co. | .... | Dec. 20, 29 | ..... | .... | .... | .... | .... |
| 20⅛ | 6¾ | 17 | 9 | 100,000 | 10 | Southern Pipe Line Co. | 50cQ | Sept. 1, 31 | ..... | .... | .... | .... | .... |
| 45⅞ | 18 | 23⅞ | 12 | 1,200,000 | 25 | South Penn Oil Co. | 25cQ | Sept. 30, 31 | 300 | 13½ | 13 | 13 | — 1 |
| 64 | 32 | 42½ | 25 | 35,000 | 50 | Southwest Pa. Pipe Lines | $1Q | Oct. 1, 31 | ..... | .... | .... | .... | .... |
| 59⅞ | 30 | 38½ | 15⅞ | 16,996,596 | 25 | S. O. Indiana | 50cQ | Sept. 15, 31 | 20,500 | 22 | 19⅞ | 20 | — 1⅛ |
| 40½ | 18⅞ | 23⅝ | 13¼ | 2,588,735 | 10 | S. O. Kentucky | 40cQ | Sept. 30, 31 | 2,500 | 16⅞ | 16⅛ | 16⅛ | — ¾ |
| 48⅞ | 34 | 36½ | 16½ | 190,822 | 25 | S. O. Nebraska | 50cQ | Sept. 20, 31 | 200 | 26 | 25¼ | 26 | + 1 |
| 108½ | 43¼ | 62½ | 35 | 811,112 | 25 | S. O. Ohio | 62½cQ | Oct. 2, 31 | 100 | 40 | 40 | 40 | — 3 |
| .... | .... | 115¼ | 90 | 120,000 | 100 | do 5% pfd. | $1.25Q | Oct. 15, 31 | 20 | 90 | †90 | 90 | — ¼ |
| 10 | 4 | 10 | 2⅝ | 34,158 | 25 | Swan Finch Oil Corp. | .... | Jan. 15, 29 | ..... | .... | .... | .... | .... |

*New high †New low ††Also extra—Chesebrough 50c; N. Y. Transit 10c; Northern P. L. 50c.

# Oil and Royalty Stocks on New York Curb

| 1930 High | 1930 Low | 1931 High | 1931 Low | Par Value | | Sales Shares | Transactions Week Ended Nov. 21 High | Low | Last | Week's Change |
|---|---|---|---|---|---|---|---|---|---|---|
| 4½ | ½ | 1¾ | ¼ | N.P. | American Maracaibo | 500 | ⅜ | ⅜ | ⅜ | 0 |
| 16⅜ | 4⅝ | 6½ | 2⅛ | N.P. | Arkansas Nat. Gas | 1,100 | 3¼ | 3 | 3 | — ⅛ |
| 16⅝ | 4⅝ | 6¾ | 2 | N.P. | do A | 8,500 | 3¼ | 2⅝ | 2¾ | — ⅜ |
| 8⅛ | 6¼ | 7 | 3⅞ | $10 | do pfd. | 500 | 5⅝ | 5½ | 5½ | 0 |
| 1 | ⅛ | 1 | ⅛ | N.P. | Atlantic Lobos | 100 | ⅛ | ⅛ | ⅛ | 0 |
| 1½ | ⅛ | 3¼ | ¼ | $50 | do pfd. | 200 | ⅞ | ¾ | ¾ | 0 |
| 21 | 13⅜ | 16⅞ | 6¼ | N.P. | British American coup. | 300 | 10⅛ | 10 | 10 | — 1¼ |
| .... | .... | 16¾ | 10 | N.P. | do registered | ..... | .... | .... | .... | .... |
| 2¾ | ⅝ | 2⅜ | ⅛ | $¼ | Carib Syndicate | 3,000 | ½ | ½ | ½ | 0 |
| 44¼ | 13⅛ | 20¾ | 5¼ | N.P. | Cities Service | 55,300 | 7⅞ | 7 | 7⅛ | — ⅝ |
| 93⅞ | 78¼ | 84¾ | 35⅜ | $100 | do pfd. | 1,400 | 58⅜ | 57⅜ | 57⅞ | — ⅛ |
| 9 | 7¼ | 7¾ | 4⅜ | 10 | do pref. B | 300 | 5½ | 4¾ | 5½ | + 1⅛ |
| 89⅞ | 80 | 84 | 42 | 100 | do pref. BB | 25 | 54 | 54 | 54 | + 9½ |
| 8¼ | 1⅜ | 3⅛ | ¾ | N.P. | Colon Oil Corp. | 1,200 | 1 | 1 | 1 | 0 |
| 21 | 3⅜ | 7⅛ | 1 | N.P. | Col. Oil & Gas. vtc. | 1,200 | 1⅞ | 1¾ | 1¾ | — ⅛ |
| 5⅞ | 2 | 2¾ | 1¼ | $1 | Consolidated Royalty | 2,500 | 1¾ | 1¼ | 1¼ | — ¼ |
| 74¾ | 1¼ | 3¾ | ½ | N.P. | Cosden Oil | 1,300 | 1 | ⅞ | ⅞ | 0 |
| 70 | 10¼ | 15 | 1 | $100 | do pfd. | 100 | 1⅞ | 1⅞ | 1⅞ | — 3¼ |
| 1 | ¼ | ⅝ | ⅛ | N.P. | Crown Central Petrol. | 100 | ¼ | ¼ | ¼ | + ⅛ |
| 21¾ | 2½ | 5 | 2 | N.P. | Darby Petroleum | 100 | 2⅜ | 2⅜ | 2⅜ | — ⅛ |
| 11 | 2 | 6 | 1¾ | N.P. | Derby Oil & Refining | 500 | 2¼ | 2¼ | 2¼ | + ⅛ |
| 60 | 30 | 40⅛ | 25 | N.P. | do pfd. | ..... | .... | .... | .... | .... |
| 106⅞ | 58½ | 76 | 38 | $25 | Gulf Oil Corp. | 2,800 | 49½ | 46 | 46 | — 2 |
| 40¾ | 36 | 9¾ | 9¾ | .... | Honolulu Oil Corp. | ..... | .... | .... | .... | .... |
| 47½ | 12⅝ | 16⅞ | 5½ | N.P. | Indian Ter. Ill'g. Oil A | 100 | 6½ | 6½ | 6½ | — ½ |
| 53⅛ | 12⅜ | 16⅞ | 6⅛ | N.P. | do B | 400 | 6½ | 6⅜ | 6½ | — ⅜ |
| 1¼ | ⅛ | ⅜ | ⅛ | $5 | Intercontinental Petrol. | 3,800 | ⅜ | ¼ | ⅛ | — 1⅛ |
| 3 | ⅞ | 1⅞ | ½ | N.P. | Kirby Petroleum | ..... | .... | .... | .... | .... |
| 4¾ | ½ | 1½ | ⅛ | $25 | Leonard Oil Devel. | 800 | ⅜ | ⅜ | ⅜ | 0 |
| 29 | 4⅞ | 6¾ | 2¾ | N.P. | Lion Oil Refining | 100 | 3¼ | 3¼ | 3¼ | + ½ |
| 55⅞ | 19⅝ | 29 | 7¼ | N.P. | Lone Star Gas | 1,500 | 10 | 9¼ | 9¼ | — ⅞ |
| 31 | 5½ | .... | .... | $25 | MacMillan Petroleum | ..... | .... | .... | .... | .... |
| ½ | ⅛ | 1¾ | ⅛ | $1 | Magdalena Syndicate | 100 | ⅛ | ⅛ | ⅛ | — ⅛ |
| 16 | 3 | 5 | 2⅜ | N.P. | Margay Oil Co. | 100 | 4 | 4 | 4 | — ½ |
| 7½ | 1¾ | 4⅞ | 1½ | N.P. | Mexico-Ohio Oil | ..... | .... | .... | .... | .... |
| .... | .... | 8⅛ | 1½ | N.P. | Michigan Gas & Oil | 400 | 2 | †1½ | 2½ | — ⅜ |
| 11⅞ | 2¼ | 4⅝ | ⅞ | N.P. | Mid. States Pet. A vtc. | 100 | 1¼ | 1¼ | 1¼ | — ¼ |
| 6 | ⅝ | 1½ | ½ | N.P. | do B vtc. | 400 | ½ | ½ | ½ | — ⅛ |
| 36½ | 5 | 11 | 1⅞ | $5 | Missouri-Kansas P. L. | 2,800 | 2 | †1⅞ | 1⅞ | — ⅛ |
| 6 | ⅜ | ⅝ | ⅛ | 1 | do B vtc. | ..... | .... | .... | .... | .... |
| ⅜ | ⅛ | ⅞ | ⅛ | 1 | Mountain & Gulf | ..... | .... | .... | .... | .... |
| 12½ | 3¾ | 5⅞ | 2½ | 10 | Mountain Producers | 400 | 3⅜ | 3¼ | 3¼ | — ¼ |
| 41⅜ | 19⅞ | 26½ | 11½ | N.P. | National Fuel Gas | 2,200 | 16⅞ | 14¾ | 14⅞ | — ⅛ |
| 3½ | 1⅛ | 1½ | ½ | $5 | New Bradford Oil | ..... | .... | .... | .... | .... |
| 3⅛ | 2⅛ | 2⅛ | 1½ | 10 | New England Fuel | ..... | .... | .... | .... | .... |
| 16⅞ | 4 | .... | .... | 25 | N. Y. Pet. Royalty | ..... | .... | .... | .... | .... |
| .... | .... | 6½ | 6½ | 10 | N. American Oil | ..... | .... | .... | .... | .... |
| 11¼ | 2⅛ | 3¼ | 1 | N.P. | North Central Texas | ..... | .... | .... | .... | .... |
| 4⅛ | ⅝ | 2½ | ⅜ | N.P. | North European Oil | 1,900 | 7⁄16 | ⅜ | ⅜ | — 1⁄16 |
| 11⅝ | 3⅛ | 5 | 1 | N.P. | Oilstocks Ltd. A | ..... | .... | .... | .... | .... |
| 11½ | 4½ | 5 | 2¼ | N.P. | do B | ..... | .... | .... | .... | .... |
| 19½ | 5½ | 15 | 3 | N.P. | Pacific Western Oil | 2,000 | 5 | 5 | 5 | 0 |
| 2½ | ¼ | .... | 1⁄16 | N.P. | Pandem Oil | 2,000 | 1⁄16 | 1⁄16 | 1⁄16 | 0 |
| 4⅜ | 1 | 2 | ⅝ | N.P. | Pantepec of Venezuela | 900 | ¾ | ⅝ | ⅝ | 0 |
| 5⅞ | ½ | 1⅛ | ¼ | .... | Petroleum Corp war | ..... | .... | .... | .... | .... |
| 27½ | 16¼ | 19 | 6 | $5 | Plymouth Oil | 1,000 | 9½ | 9 | 9 | — ½ |
| 8 | 3⅜ | 4½ | ⅜ | N.P. | Producers Royalty | 200 | ⅜ | ⅜ | ⅜ | 0 |
| 99 | 81¾ | 83½ | 15¾ | $100 | Pure Oil 6% pfd. | ..... | .... | .... | .... | .... |
| 10½ | 1½ | 2½ | 1 | N.P. | Red Bank Oil | ..... | .... | .... | .... | .... |
| 5⅜ | ⅝ | 2¼ | ½ | N.P. | Reiter-Foster Oil | 600 | 1 | ¾ | ¾ | — ⅛ |
| 23½ | 6½ | 11 | 1 | $25 | Richfield Oil pfd. | ..... | .... | .... | .... | .... |
| 25 | 2¼ | 5 | 1¾ | N.P. | Root Refining pfd. | ..... | .... | .... | .... | .... |
| 12⅞ | 5½ | 3¾ | ½ | $10 | Roy. Corp. of Amer. pfd | 200 | ½ | †½ | ½ | — ½ |
| 8⅜ | 2 | 2⅞ | 1 | N.P. | Ryan Consolidated | ..... | .... | .... | .... | .... |
| 2½ | ½ | 1⅜ | ¼ | $10 | Salt Creek Consol. | ..... | .... | .... | .... | .... |
| 15¼ | 5¼ | 7⅜ | 3¾ | 10 | Salt Creek Producers | 600 | 4¾ | 4½ | 4½ | — ¼ |
| 8 | 1¾ | 5¼ | 2 | 25 | Shreve. El Dorado P.L. | ..... | .... | .... | .... | .... |
| 17 | 6 | 7½ | 3⅝ | N.P. | Southland Royalty | 700 | 4¼ | 4⅛ | 4⅛ | 0 |
| 10 | 2 | 5¼ | 1⁄16 | $5 | Sunray Oil | 3,800 | ⅝ | ½ | 5⁄8 | + 1⁄16 |
| 19½ | 8 | 12⅞ | 2½ | N.P. | Texon Oil & Land | 500 | 6½ | 6⅛ | 6⅛ | — ⅜ |
| 47½ | 19 | 24½ | 11¼ | $25 | Union Oil Associates | 100 | 15½ | 15½ | 15½ | 0 |
| 4½ | ⅝ | 1⅞ | ⅜ | 5 | Venezuela Petroleum | 1,000 | ½ | ½ | ½ | — ⅛ |
| 5 | 2 | 3½ | 1⅜ | 1 | Woodley Petroleum | ..... | .... | .... | .... | .... |
| 2½ | ⅜ | 2¼ | ¼ | N.P. | Y Oil & Gas | 800 | ⅜ | ⅜ | ⅜ | — ⅛ |

*New high †New low

# Oil Dividends

## Declared Last Week

| Company and Period | Amount | Stock of Record Payable | Record |
|---|---|---|---|
| Chesebrough Mfg. q. | $1 | Dec. 30 | Dec. 10 |
| do extra | $1 | Dec. 30 | Dec. 10 |
| Cities Service m. | 2½c | Jan. 2 | Dec. 15 |
| do stock m. | ½% | Jan. 2 | Dec. 15 |
| do pfd. q. | 50c | Jan. 2 | Dec. 15 |
| do pref. B m. | 5c | Jan. 2 | Dec. 15 |
| do pref. BB m. | 50c | Jan. 2 | Dec. 15 |
| General Asphalt q. | 50c | Dec. 15 | Dec. 1 |
| International Pet. q. | 25c | Dec. 15 | Nov. 30 |
| National Transit q. | 25c | Dec. 15 | Nov. 30 |
| New York Transit q. | 15c | Jan. 15 | Dec. 23 |
| do extra | 10c | Jan. 15 | Dec. 23 |
| N. Cent. Texas pfd. q. | $1.62½ | Jan. 2 | Dec. 10 |
| Northern Pipe Line s.a. | $1.50 | Jan. 2 | Dec. 21 |
| The Texas Corp. q. | 50c | Jan. 1 | Dec. 4 |
| Valvoline Oil q. | $1.50 | Dec. 28 | Dec. 24 |
| do pfd. q. | $2 | Jan. 1 | Dec. 17 |

## Awaiting Payment

| Company and Period | Amount | Stock of Record Payable | Record |
|---|---|---|---|
| Atlantic Refining q. | 25c | Dec. 16 | Nov. 21 |
| British American Oil q. | 20c | Jan. 2 | ..... |
| Buckeye Pipe Line q. | $1 | Dec. 15 | Nov. 20 |
| Cities Service m. | 2½c | Dec. 1 | Nov. 14 |
| do stock m. | ½% | Dec. 1 | Nov. 14 |
| do pfd. m. | 50c | Dec. 1 | Nov. 14 |
| do pref. B m. | 5c | Dec. 1 | Nov. 14 |
| do pref. BB m. | 50c | Dec. 1 | Nov. 14 |
| Imperial Oil q. | 12½c | Dec. 1 | Nov. 14 |
| McColl Frontenac q. | 15c | Dec. 15 | Nov. 14 |
| Ohio Oil pfd. q. | $1.50 | Dec. 15 | Nov. 21 |
| Socony Vacuum q. | 25c | Dec. 15 | Nov. 20 |
| Southern Pipe Line q. | 50c | Dec. 1 | Nov. 16 |
| S. O. California q. | 62½c | Dec. 15 | Nov. 16 |
| S. O. Indiana q. | 25c | Dec. 15 | Nov. 16 |
| S. O. Nebraska q. | 50c | Dec. 21 | Nov. 27 |
| S. O. New Jersey q. | 25c | Dec. 15 | Nov. 16 |
| do extra | 25c | Dec. 15 | Nov. 16 |
| Sun Oil q. | 25c | Dec. 15 | Nov. 25 |
| do pfd. q. | $1.50 | Dec. 1 | Nov. 10 |
| Union Tank Car q. | 40c | Dec. 1 | Nov. 16 |

# New York Curb Bonds

Week Ending Nov. 20

| | High | Low | Last | Change |
|---|---|---|---|---|
| Beacon Oil 6s '36 | 95¼ | 95 | 95 | 0 |
| Cities Serv. 5s '66 | 53¾ | 52 | 52 | —1 |
| Cities Serv. 5s '66 | 55¼ | 52½ | 52¾ | —1⅜ |
| Cities Serv. G. 5½s '42 | 56 | 53½ | 53½ | —2¼ |
| Cities Serv. G. P. 6s '43 | 60⅛ | 59½ | 59½ | — ⅝ |
| Cont. Oil 5⅛s '37 | 89 | 86⅜ | 86⅜ | —3⅛ |
| Empire O & R 5½s '42 | 51⅜ | 50⅛ | 50⅝ | — ⅛ |
| Gulf Oil 5s '37 | 99½ | 98½ | 98½ | — ¼ |
| Gulf Oil 5s '47 | 98 | 97¼ | 97¼ | — ¼ |
| Indep. Oil 6s '39 | 89½ | 87½ | 87½ | — ½ |
| Sun Oil 5s '34 | 94¾ | 94 | 94 | — ½ |
| Valvoline Oil 7s '37 | 80 | 80 | 80 | +3 |

## Good Roads Cut 2 Cents From Auto Costs

WASHINGTON—A saving of 2 cents per mile in the operation of an automobile is effected on highly improved roads, according to a report by the American Road Builders Association.

The saving where unimproved roads have been changed to an intermediate type road is 1.07 cents per mile; where intermediate type is changed to high type, 0.99 cent per mile; and where unimproved type has been changed to high type, 2.06 cents per mile.

This report, for which cost figures have been secured from some 800 automobiles operated in various parts of the United States, indicates that over all types of surfacing, the average cost of automobile operation, in cents per mile, is:

Light fours, 6.02; medium fours, 6.42; heavy fours, 7.20; light sixes, 7.38; medium sixes, 8.40; and heavy sixes, 9.45 cents.

The report also showed that, as the type of road becomes poorer, the cost of tires and tubes increases, as well as gasoline consumption.

The following costs were established on an imaginary "average" automobile, based on annual mileage of 11,000 miles, in cents per mile:

Gasoline, 1.31 cents; oil, 0.22; tires and tubes, 0.64; maintenance, 1.72; depreciation, 1.39; license, 0.14; garage at $4 per month, 0.44; interest at 6 per cent, 0.36; and insurance, 0.21 cent.

Total operating cost per mile of the "average" automobile is 6.43 cents.

Allowing 15 miles to a gallon, the 15,000,000,000 gallons of gasoline consumed in 1930 carried motor vehicles 225,000,000,000 miles. If half this travel were on the 700,000 miles of surfaced roads, the saving to the public each year, over traveling on poor roads, is $2,500,000,000, which is in excess of present highway maintenance expenditures, says the report.

## Films Show Auto and Oil Problems For Layman

WASHINGTON, Nov. 23.—The most comprehensive series of educational motion picture films on the automotive and allied industries ever assembled has been prepared by the U. S. Bureau of Mines, in co-operation with various manufacturing concerns.

The films depict the production of crude, its refining, and the treatment of gasoline derived from crude; the operation and care of the gasoline motor; the workings of storage battery; the manufacture and care of spark plugs; and the making of lubricants and the lubrication of an automobile.

These films are loaned free of charge to any one by writing the bureau at the Pittsburgh Experiment Station, U. S. Bureau of Mines, Pittsburgh, Pa.

Films produced up to the present time are:

The Story of a Gasoline Motor; The Story of Gasoline; The Story of a Storage Battery; Heat Treatment of Steel; Along the Firing Line, or the Story of the Spark Plug; The Story of Lubricating Oil; Automobile Lubrication; Carbon Monoxide, the Unseen Danger; The Power Within.

## Sell 60% To Own Wholesale Plants

WASHINGTON—Refiners' own wholesale branches use nearly two-thirds of the value of the sales of all petroleum products made by refining plants, according to the Census of Distribution.

Total sales by these plants in 1929 amounted to $2,639,665,000, of which 60.3 per cent, or $1,592,553,000 was sold in this way, data collected by the bureau indicates.

Other sales made from refineries in 1929 were:

To wholesalers, 18.3 per cent, or $484,102,000; to industrial consumers, such as manufacturers, bus lines, steamship companies, etc., 8.6 per cent, or $225,988,000; to refiners' own retail branches, 7.6 per cent, or $200,144,000; and to retailers, 5.2 per cent, or $136,878,000.

Selling agents, brokers and manufacturers agents, sold $62,901,000 worth of petroleum products to dealers and industrial consumers.

## Germany Importing More Soviet Oil

WASHINGTON—Oil trade of Soviet Russia is gaining in the German market, according to German trade information.

During 1930 Russia sold 3,000,000 tons of petroleum products to Germany, representing 12.7 per cent of the total value and 11.5 per cent of the total quantity imported by Germany that year. In the first half of this year, the value of Soviet oil imports into Germany was 19 per cent of the total value and quantity was 15.9 per cent of the total quantity imported.

Soviet oil products are distributed in Germany by the Deutsche Vertriebsgesellschaft fuer Russische Oelprodukte A. G. of Berlin, known as Derop.

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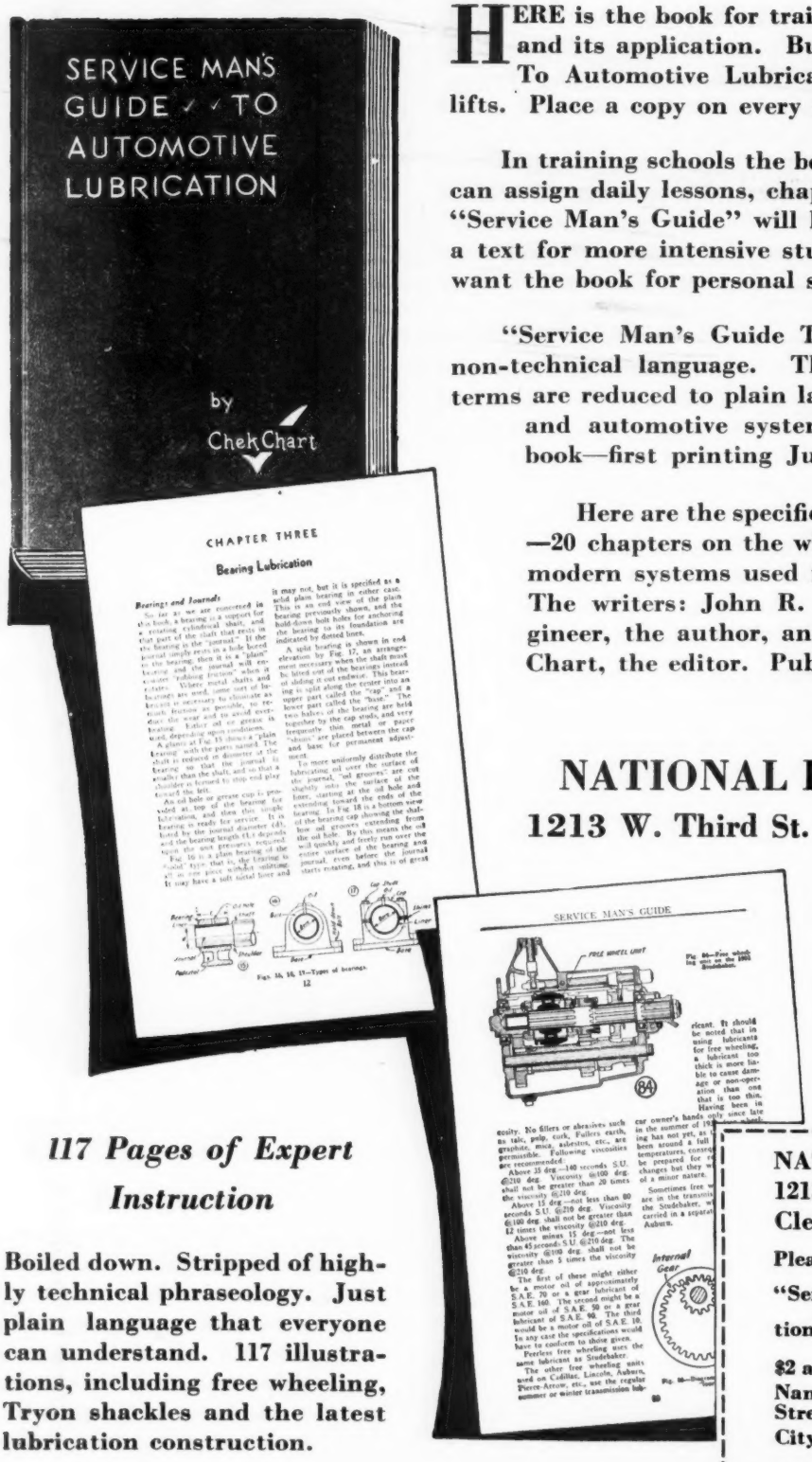
# Buy A Copy For Every Lubrication Employe

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